

AUTUMN 2005

Harvard Medical

ALUMNI BULLETIN



EXPOSED TO THE ELEMENTS

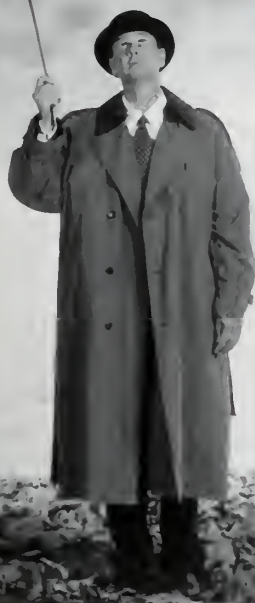
How much longer can the
United States afford to go without
universal health coverage?



LUMINARY

Compelled by a long-held desire to become a surgeon, Maurice Richardson (pictured here circa 1905) joined the surgical ranks at Massachusetts General Hospital soon after graduating from HMS in 1877. His skills earned him the distinction of the Moseley Professorship of Surgery. An advocate of surgery as a specialty, Richardson excelled in abdominal surgery and pioneered the development of the appendectomy.

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In This Issue

LOOKING AT THE U.S. HEALTH CARE SYSTEM TODAY IS LIKE WATCHING IN slow motion as the wine glass teeters—just before it falls, spills, and shatters. You know what's coming and find it odd how immobilized you are when action seems imperative. In this issue of the *Bulletin* our special report is about the uninsured in the United States—a group whose numbers are rising as inexorably as the Gulf Coast waters did last fall. (We also spend some time with HMS alumni who were caught in that disaster.)

In important ways, identifying the “uninsured” as the issue undermines our ability to address it. If the problem is framed as one concerning an underprivileged group of people, then the reflex response is to adopt one of two seemingly opposite but ultimately similar and unproductive ways of thinking. Health care for the less fortunate can be seen as requiring some form of charity or welfare, which indicates that people of means are asked to bestow a benefit on those without. Or it can be called a basic “right,” whereupon the have-nots are seen as forcing the haves to yield some of their bounty. Either way, hidden in the term “uninsured” is an implicit opposition between “us” and “them.” When such a line is drawn a certain political paralysis sets in, and awful gravity takes its toll.

This rhetorical dead end does not seem inevitable, however. Without becoming sappy or eschewing analysis, one may recognize that lack of adequate insurance for a large fraction of the population has become everyone's problem. In 1953 Charles E. Wilson (often misquoted) said, “For years I thought what was good for our country was good for General Motors, and vice versa.” It has become increasingly clear that a unified and universal health insurance plan, not tied to employment, would have been very, very good for General Motors. It only remains to be seen whether this country's political and business leadership can become capable of developing a system that is adequate, economical, and fair. Stay tuned, but don't hold your breath.

* * *

Beverly Ballaro, our associate editor for six years, has left the *Bulletin* to be with three growing boys and to develop her writing gifts in other areas. She leaves us with warm memories and a legacy of fine articles, including those she wrote about HMS during World War II. This issue introduces Ann Marie Menting as our new associate editor. She brings a broad background in science journalism, and we will look to her to help us strengthen our coverage of science at HMS.

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Unsolved Mysteries

I want to thank and congratulate you on the consistently superb quality of the *Bulletin*. Every issue is compulsively readable, and the articles are fascinating, well written, varied, and informative. In particular, the Spring 2005 issue on history's medical mysteries I had to wrest away from my wife, Morelle, a former diplomat quite innocent of medical arcana. She couldn't put it down. We are both art buffs and found Margaret Livingstone's piece on stereoblindness provocative and convincing.

May I suggest that you consider frequently including one or more articles along these lines? What, for example, killed Tchaikovsky—suicide by poisoning, or cholera, accidentally or deliberately acquired? And what about Chopin—tuberculosis or cystic fibrosis?

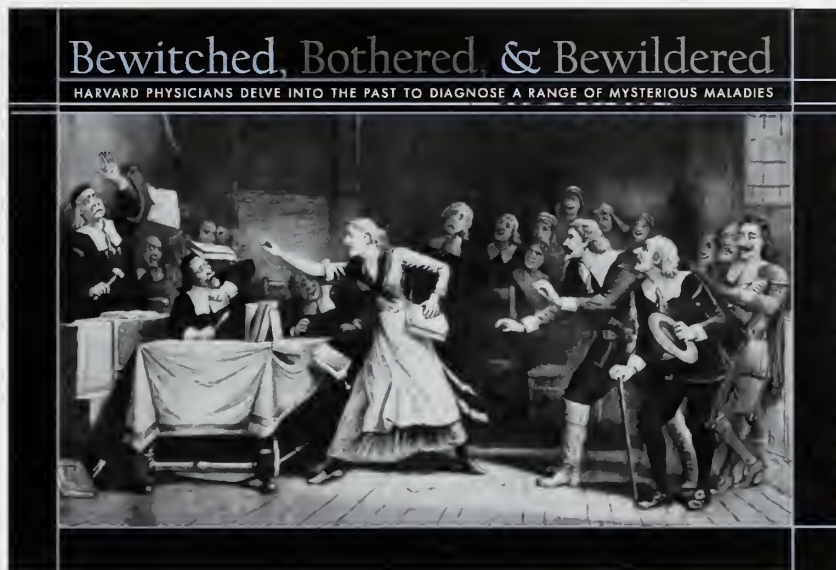
Another topic that might be of wide interest is the possible link between artistic creativity—or creativity in general—and homosexuality. Could this be a matter of brain structure, such as a larger corpus callosum in gay men? It's a fascinating puzzle.

An additional topic that intrigues me is the color theory of Edwin Land—first proposed by Goethe. I've done Land's retinex theory experiment several times, and although logic says it shouldn't work, it does, amazingly. When I take separate black and white pictures of a colored object using a red or green filter, reverse the negatives to positives, project them through the respective colored filter onto a screen, and superimpose them, they do produce a full-colored image. If you're unfamiliar with this, Google is a prodigious resource.

NORMAN D. LEVINE '56
LOS ANGELES, CALIFORNIA

The Brothers Grim

One section of "Bewitched, Bothered, and Bewildered" in the Spring 2005 issue of the *Bulletin* offers an interesting



perspective on reasons for the so-called Salem delusion of 1692, but omits a likely explanation.

In 1630, the John Winthrop fleet sailed from England carrying several hundred passengers fleeing religious persecution. Among these emigrants were three brothers from Bures who carried the gene for Huntington's chorea. Approximately a thousand of their descendants—some of whom settled in Salem and the Boston Bay area during the seventeenth century—manifested the disorder. There has been speculation that the Salem witches were choreics; indeed, Mercy Disborough, a granddaughter of one of the Bures brothers, was twice tried (and pardoned) during the trials. Given its clinical course it is unlikely that all the witches, or any of their accusers, were afflicted with Huntington's disease. Nevertheless, the striking similarity between descriptions of the illness and the young girls' behaviors suggests some association.

I believe the adolescent girls were impressionable souls who consciously or unconsciously mimicked symptoms of choreics they observed in and around Salem. Although the motivation for their fits is uncertain, it can be understood as an attempt to master feelings stirred by

observing the bizarre behaviors of those with the disease, an identification with the aggressor in the paradigm of ego psychology. Why these events culminated in accusations of Satan's presence is also unclear, though many have suggested Tituba's influence, and witchcraft was frequently invoked as an explanation for hardships endured by the villagers and "as much to be anticipated as Indian raids," according to Perry Miller's *The New England Mind: From Colony to Province* (Harvard University Press, 1953). This explanation for the Salem delusion suggests it was a psychosocial response to a physical illness, one that conveyed broad utility; the accusers reaped psychological benefit while villagers were comforted by the belief that they were promoting their secular and eternal salvation by rooting out Satan's messengers.

In fairness, ergot poisoning could also have been the trigger for the accusers' actions, though I find the similarity between descriptions of Huntington's symptoms in neurology texts and the girls' fits too compelling to ignore. I am unaware of the particulars of the other witch trials noted (1638–1699), but the fact that two of the brothers from Bures traveled in New England for several years

before settling in Stamford, Connecticut, might implicate Huntington's disease in those events.

STEPHEN A. GREEN, MD
CHEVY CHASE, MARYLAND

Best in Class

The article by Michael LaCombe '68 on "Taking a History" in the Winter 2005 issue of the *Bulletin* has been gnawing at me. Not that I can dredge up any famous medical "ancestors," but the article made me ponder the HMS faculty members with the greatest influence on my later career, which focused on designing community support systems aimed at preventing a range of problems in young children.

Two individuals came to mind: Erich Lindemann in psychiatry with his community approach to preventing psychiatric problems and David Rutstein '34 in preventive medicine who had us read the Newcastle-Upon-Tyne studies done in England. Their teaching gave me my first real insight into the importance of understanding the family and community contexts that influence the distribution of illnesses in any population. I regret that I never gave these faculty members this kind of feedback while they were still actively teaching. I encourage others to be timelier in acknowledging those who have influenced their careers.

Thanks for so many stimulating articles in the *Bulletin*.

R. W. CHAMBERLIN '56
CONCORD, NEW HAMPSHIRE

Every Step of the Way

The anecdote that Michael LaCombe '68 told about Paul Dudley White '11 in the Winter 2005 issue reminded me of my own experiences with Dr. White.

One of my patients, while playing golf on a hot summer day in 1963, suffered a severe myocardial infarction. He was put on anticoagulant therapy and enclosed in a celluloid-windowed opaque oxygen tent, the usual treatment at the time.

Having read in the paper that Dr. White was coming to our area to



TICKET TO RIDE: Samuel Potsubay (far left) stands with Paul Dudley White (wearing the hat) and the mayor of Holyoke, Massachusetts, at a 1963 dedication of a bicycle path.

dedicate a bicycle pathway, the patient's wife asked about having him as a consultant in her husband's case. Dr. White was, at the time, the world's preeminent cardiologist. Luckily, I had once been a student of his, and he and I had several mutual patients about whose care we often communicated. So I didn't hesitate to telephone Dr. White's home. He agreed to my request, and while I drove him to the bicycle pathway, he told me the following story: He had been invited to the White House by Dr. Janet Travell to see President John Kennedy. But when his plane landed, he learned that he had missed the bus to the Capitol and there wouldn't be another one for several hours.

"How far is it to the White House?" Dr. White asked a clerk. "Oh, it's about three or four miles from here," the man replied. "You can just see it on the high ground over there."

With that, Dr. White picked up his briefcase and began trudging along the

highway. Taking pity on the elderly man plodding along, passing motorists offered him rides, which he politely declined, saying he needed the exercise. When he finally arrived at the White House drenched in sweat, he told the incredulous guard that he had been summoned by Dr. Travell. When she arrived and learned of his trek, she said, "Just a second. I'll go get Jack."

When President Kennedy appeared, he exclaimed, "Gracious me, Dr. White! I'm told you walked all the way from the airport. You must be exhausted!" Dr. White's gruff reply was, "Oh, it wasn't so bad. But you sure have lousy sidewalks down here!"

SAMUEL POTSUBAY '40
SOUTH HADLEY, MASSACHUSETTS

The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-384-8901); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.

Salad Days

TO RUN A LITTLE FASTER AND JUMP a little higher, HMS faculty appear to rely more on good health habits than on Air Jordans. At least that's what might be derived from the responses of 2,115 faculty members who were surveyed recently by the *Harvard Health Letter*. The survey, developed to mark the periodical's 30th anniversary, reprises similar polls by the publication conducted in 1982 and 1992.

The survey's results show that most respondents adhere to the same healthy diet and exercise regimens they likely suggest to their patients. For example, nearly half exercise at least three times a week at an intensity gauged to be moderate or higher. Their preferred forms of exercise? Walking (35 percent) or jogging (24 percent) with about 13 percent choosing to cycle.

Eighty-two percent eat breakfast regularly and a little less than half consume three to four servings of fruit or vegetables each day. Crunchy granola and its whole-grain cousins, however, are popular only with about 33 percent who eat three or more servings of whole grains each day.

About 12 percent fessed up to eating at fast food places weekly; about half drink alcohol in moderation, imbibing between one and five drinks per week; and nearly 57 percent use olive oil rather than other types of fats when preparing food. And for slightly more than half the respondents, it's not the cheese that stands alone, it's the egg, which appears less than once a week on menus.

Although 46 percent eat fish at least twice a week, only 9 percent swallow a

capsule of fish oil regularly. Other vitamins and supplements taken regularly include multivitamins (nearly 78 percent) and vitamin E (13 percent). Nearly 18 percent take vitamin C, but the urge to up that intake when battling a cold is low, with almost 74 percent shunning that remedy. For more than one quarter of the respondents, standing straight and

69 percent). To help keep their body mass in check, nearly 48 percent had dieted in the past five years. But to reach their weight goals, most avoided the trendy low-fat and low-carb diets, opting to fight the good fight by controlling food portions (55 percent). Only about 20 percent, interested in doing a little adding while subtracting, chose to count calories.

Fifty-seven percent rated their risk of heart disease as low. When asked what they do to reduce their risk, or to keep it low, exercise walked away with the prize, with nearly 74 percent opting to pump up their heart rate on a regular basis. Cutting down on the consumption of saturated fats was a solid second at nearly 62 percent. Somewhat surprisingly, nearly 12 percent did nothing, apparently depending upon good fortune—or good genes. Around 44 percent know neither their low-density lipoprotein nor high-density lipoprotein levels, and more than three-quarters of the respondents eschew use of low-dose aspirin.

Of the 98 percent who don't smoke now, about 76 percent indicate they have never smoked.

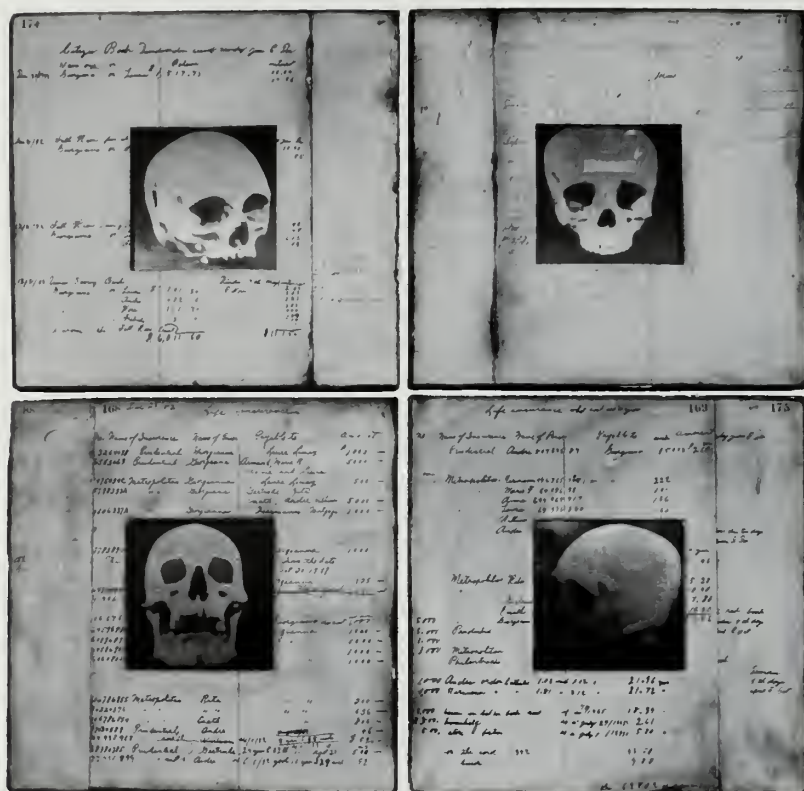
Doctors do turn to other doctors for medical needs, according to the survey. Sixty-one percent had received a physical within the past year and 92 percent have a primary care physician. So that personal health decisions may be taken care of down the road, more than 35 percent have both a health care proxy statement and a living will.

The full results of the survey were published in the October issue of the *Harvard Health Letter*. ■



strong is likely helped along by calcium supplements. Herbal supplements rank low among respondents; 72 percent had never taken St. John's wort, ginkgo, ginseng, or similar substances.

A greater percentage than might be found among the general population know their body mass index (48 percent) and the prevailing definitions of "overweight" and "obesity" based on that index (nearly



The Art Is Long

THE CENTER FOR THE HISTORY OF MEDICINE AT COUNTWAY LIBRARY HAS taken on another role recently—as a patron of the arts. *Ars Longa—Vita Brevis*, an exhibit of digital collages developed for the library by artist Dorothy Simpson Krause and debuted in Countway's first floor exhibit area, has found a permanent space online at www.dotkrause.com/art/ArsLonga/index.htm. Krause, a printmaker who uses digital images to create multilayered works, is the library's first artist-in-residence. A professor emeritus at the Massachusetts College of Art, she is regarded as a pioneer in digital printmaking.

To produce the works in the exhibit, Krause sifted through the collection of about 13,000 objects in the center's Warren Anatomical Museum before photographing a number she considered to have visual power and to represent "timeless personal and universal issues."

In the work *Insurance*, shown above, Krause printed photographs of various views of a skull onto clear film, mounted the transparent images over small mirrors, then framed them with pages from a handwritten journal of life insurance payments found at a flea market.

By juxtaposing photographs of the objects selected from the collection with more ordinary items, including ephemera she has collected, Krause sought to produce works that would "humanize" the objects and provide them a more accessible context. ■

The Class of 2009

THE 165 NEWEST MEMBERS OF THE Harvard Medical School community, the Class of 2009, donned bright emblems of their new careers during the School's White Coat Ceremony in September. Women form the majority at nearly 52 percent of the class. The class includes graduates from 62 different undergraduate institutions in 32 states, the District of Columbia, and Puerto Rico, as well as from Australia, Canada, France, Germany, Hong Kong, Pakistan, and Sri Lanka. Thirty-three percent of the students are Asian Americans, 12 percent are African Americans, 9 percent are Latinos, and 1 percent are Native Americans.

The ages of students in the class range from 19 to 37. As undergraduates, 72 percent of the class majored in the sciences, 11 percent majored in the social sciences, 6 percent majored in the humanities, and 11 percent majored in other disciplines or were double majors. ■



CLOTHES MAKETH THE MAN: Takahira Soda '09 wrestles with his new garb during the White Coat Ceremony of the Division of Health Sciences and Technology.

PRESIDENT'S REPORT



Lasting Impressions

I ARRIVED AT VANDERBILT HALL LATE ONE RAINY NIGHT in the fall of 1960, in the wake of Hurricane Donna. I was a scared California boy, knowing no one in my class and worried that I was in way over my head academically. The trunk that had been sent with my blankets and clothes was locked away, and I faced the prospect of a cold night in a strange place. Fortunately, a fourth-year student in the room next to mine looked in, diagnosed my plight, and loaned me bedding. The next morning I met my classmates, and the adventure began.

Now, 45 years later, I can appreciate how much Harvard Medical School changed my life. For one, it made me a disciplined student—especially after I flunked my first biochemistry class. More important, exposure to genuinely intellectual classmates gave me a vision of what hard work and dedication could accomplish. It is now my privilege to serve the School as president of its Alumni Council. HMS

of Health would dwarf the total for the next most competitive academic medical center.

Finally, it is much more diverse. My Class of 1964 had only one person of color and five women out of 150 students. By contrast, 52 percent of the Class of 2009 are women and 22 percent are underrepresented minorities. Unfortunately, progress in achieving diversity at the residency and faculty levels, though a priority, has been slower. In addition to a growing diversity of people, the School features an increasing diversity of activities as it keeps up with the forces propelling clinical care and research.

Does this mean that HMS has no problems? Of course not. Most of its challenges are shared by all elite U.S. medical schools in the twenty-first century, though I suspect that Harvard's competitors would cheerfully undertake a trade. The very success of recent research efforts makes it difficult to sustain momentum at a time when funding has plateaued, and a strength of HMS—its many separate scientific enti-



Harvard's clinical institutions must cope with the national problems of a huge number of uninsured people and escalating pressures to reduce medical costs.

has more than 9,000 living alumni, probably about 75 percent of whom live outside the Boston area in a kind of medical diaspora. For those of you who have not visited HMS recently, let me share some impressions from my recent trips.

First of all, it is bigger. A second quadrangle has sprung up on Avenue Louis Pasteur, anchored by the New Research Building, with nearly half a million square feet devoted to basic research. The Harvard-affiliated hospitals are behemoths, whether judged by their physical plants, revenues, research budgets, or patient numbers. Not surprisingly, the number of HMS faculty also has grown, with more than 9,000 salaried members either on campus or at the hospitals. More than 7,200 interns, residents, clinical fellows, and postdoctoral fellows train at the 18 affiliated institutions.

HMS is more than big; it is also talented. It attracts top students, residents, fellows, and faculty. The combination of size, brainpower, resources, and energy creates a dazzling array of intellectual talent in virtually all aspects of medicine. HMS regularly appears as the best medical school in the various ratings of academic institutions, and its hospitals rank in the upper echelon of such lists. The sum of all grants that Harvard-affiliated faculty have won from the National Institutes

ties—also inhibits collaboration. In terms of education, the accelerated pace of patient care has left many clinician-educators struggling to provide students in the clinical years with the necessary teaching time and effort. In addition, the mounting costs of medical education and living expenses leave far too many graduates mired in huge debt. Finally, Harvard's clinical institutions, though extremely well positioned in the Boston market, must still cope with the national problems of a huge number of uninsured people and escalating pressures to reduce medical costs.

These are one person's general impressions of Harvard Medical School today. It is and will remain a great institution. I encourage you to visit the campus—at reunion time or during the year—to form your own impressions. And, if you have ideas you would like to communicate to your Alumni Council, please feel free to contact me at schroeder@medicine.ucsf.edu. ■

Steven A. Schroeder '64 is a distinguished professor of health and health care in the Department of Medicine at the University of California at San Francisco, where he also directs the Smoking Cessation Leadership Center.

The Health Care of Homeless Persons

A Manual of Communicable Diseases & Common Problems in Shelters & on the Streets, edited by James J. O'Connell '82 with Stacy E. Swain, Christine Loeber Daniels, and Joslyn Strupp Allen (Boston Health Care for the Homeless Program, 2004)

THE PHOTOGRAPHS IN THIS IMPASSIONED AND STURDY BOOK ARE a tour of humanity. Some are hard to look at—a generic foot with yellow nails being eaten away by maggots; the “linear burrows” of scabies up and down an anonymous arm; a pile of garbage with someone sleeping alongside it; a man soaking his bloodied, bandaged feet, yet grinning with pleasure that someone is taking his picture. Some are beautiful in purpose, like the shelter worker suited up in a garbage bag, clutching a bottle of lice shampoo, glaring at the camera and ready for work. A man bedded down under the beams of a bridge gazes at the nurse handing him medication by flashlight. Staff and patients in a respite facility lean together. A fellow with dapper knees sits near a fire hydrant, and the caption reads: “Outreach nurse and case worker bring daily TB medications to this elderly poet.” In the loving nouns and adjectives, side by side with immunization charts and HIV drug lists, there is awe for the patients themselves.

The awe is one of the results of a long collaborative medical effort. In 1985, the Boston Health Care for the Homeless Program was launched with a grant and eight staff members. Now the staff numbers 250, with a base of three hospitals and 70 outreach sites. (I serve part time as a psychiatrist with the program.) All together, more than 8,000 patients received treatment last year. Extant office branches can be found under bridges and behind dumpsters. Business is brisk.

For a population without homes, life is a series of practical, threatening constraints: no place to refrigerate insulin, elevate a cellulitic foot, or check a fever every four hours; endemic oral infections; hypothermia and hyperthermia at the whim of the season; sleeping bodies feeding bedbugs; and close quarters spreading infections. “The clear lesson of two decades of caring for homeless persons is straightfor-

ward,” writes James J. O'Connell '82, president of the Boston Health Care for the Homeless Program and editor of *The Health Care of Homeless Persons*, “housing is health care.” Without housing, treatment is symptomatic.

Chapters are practical, since there is no time to waste. Impetigo, hepatitis A, and tuberculosis spread quickly in shelters; lice carry *Bartonella*, certain species of which cause trench fever and endocarditis; and the “rough sleepers” living outside have it worse. “Assume that no one is dead until [they are] ‘warm and dead,’” advises a terse paragraph on hypothermia treatment. “Resuscitation efforts should continue until the body temperature reaches 90–95 F.” Street diagnosis is complicated by the fact that most thermometers don't register accurately below 93 F. A wind-chill chart plotting degrees Fahrenheit versus minutes to frostbite is included.

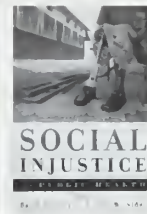
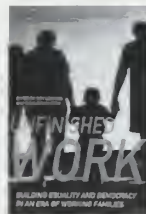
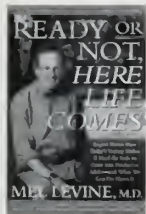
Each chapter carries standard sections on the transmission, diagnosis, and treatment of communicable and chronic diseases. Many chapters, whether on nosocomial infections, food management, sexually transmitted diseases, or traumatic brain injury, also have a section, “Special Considerations for Homeless Populations.” It seems redundant at first—isn't the entire book about homeless populations? But these sections are more specific. When evaluating hyperthermia, for instance, consider the gentle possibility that paranoid patients, who wear layers of winter clothing all summer, “may be amenable to a creative discussion about dressing more lightly.” When treating sinusitis, remember that, “humidification with steam [is] impractical for most shelter residents or people who sleep on the

street.” Pharmacology for the uninsured (and sometimes unnamed) also comes with constraints. Lists of medications at the end of each chapter have dollar signs beside them. Browsing through them is useful, though a little ironic, like reading a travel book for best buys on hotels.

We are a nation consumed, on the one hand, with best buys, and on the other, with the assailable conviction that costlier is better. A recently published 17th edition of the *Sabiston Textbook of Surgery* will run you \$159. *Youmans Neurological Surgery* (5th edition) runs \$839. *The Health Care of Homeless Persons* manual is \$15. Read here to learn about homelessness and health care, but also about humanity. ■

Elissa Ely '88 is a psychiatrist at the Massachusetts Mental Health Center.





Ready or Not, Here Life Comes

by Mel Levine '66 (Simon & Schuster, 2005)

Levine examines why so many twenty-somethings or "startup adults" seem to flounder during post-college years and be unprepared for working life. He urges high schools, teachers, and parents to give adolescents the tools they need to navigate life and work, such as self awareness, an understanding of unwritten expectations, and social skills.

Sugar & Spice and No Longer Nice

How We Can Stop Girls' Violence, by Deborah Prothrow Stith '79 and Howard R. Spivak (Jossey-Bass, 2005)

The authors describe and analyze the alarming trend of increasing violence perpetrated by girls. During the 1990s, they write, arrests of girls for aggravated assault increased by 57 percent, and by 2003, one in three juveniles arrested for violent crimes was a girl. They offer explanations, including the influence of violent images and violent female superheroes in entertainment media, and give tips for parents, teachers, and communities to stop the trend.

And Tango Makes Three

by Justin Richardson '89 and Peter Parnell, illustrated by Henry Cole (Simon & Schuster, 2005)

This charmingly illustrated children's book tells the true tale of Roy and Silo, two male chinstrap penguins at New

York City's Central Park Zoo who seemed to want a family of their own after watching how other penguin couples made nests and cuddled with their baby chicks. A sympathetic zookeeper filled the couple's vacant nest with an extra egg, which later hatched to reveal Tango.

Unfinished Work

Building Equality and Democracy in an Era of Working Families, by Jody Heymann '88 and Christopher Beem (New Press, 2005)

This book asserts that parenting is essential, socially productive labor, which needs more respect and federal support through policy and tax benefits. The authors examine historical workplace and childcare trends and how they have influenced today's gaps in equality at home and at work. They offer solutions that would assist working families at all income levels, including paid family leave and flexible work schedules.

Be a Survivor

Your Guide to Breast Cancer Treatment, by Vladimir Lange '72 (Lange Productions, Third Edition, 2005)

Lange's book helps women navigate the different breast cancer treatment choices available. Survivors' candid personal stories accompany practical checklists of questions for doctors and insurance companies. Illustrations prepare women for what to expect during the treatment process, and a DVD, new for the third edition, provides film clips of actual procedures.

Private Practice

In the Early Twentieth Century Medical Office of Dr. Richard Cabot, by Christopher Crenner '92 (Johns Hopkins University Press, 2005)

Crenner probes a critical period in medical history through the lens of the practice of Boston physician Richard Cabot, Class of 1892, an HMS professor and director of the medical service at Massachusetts General Hospital. The book includes Cabot's correspondence with his patients during the early years of the twentieth century, when the rise of advanced medical technologies frequently baffled patients and physicians alike. The author provides insight into the way those new technologies transformed the traditional doctor-patient relationship.

Social Injustice and Public Health

Edited by Barry S. Levy and Victor W. Sidel '57 (Oxford University Press, 2006)

Levy and Sidel focus on how social injustices—such as poverty, racism, and ageism—compromise the health of vulnerable populations. The authors suggest multiple solutions to bridge "unconscionable" gaps, including constructing international and national human rights policies, developing more public health education, and providing disadvantaged individuals with social networks within communities. Addressing social inequality, the authors write, will help all Americans realize the core values of freedom.

A Pitch for What Ails You

GIVING A WHOLE NEW MEANING to sports medicine, HMS researchers at Children's Hospital Boston have found that during key Red Sox games—specifically the race-for-the-pennant ones in 2004—visits to six Boston-area emergency departments dropped.

And the more riding on the game, the bigger the drop. The investigators found a dip of only 5 percent in expected volume during game 5 of the American League Championship Series (ALCS)—when a Sox loss would have put them out of the race—but found a 15 percent or greater drop in expected traffic during ALCS games 6 and 7 and the reverse-the-curse game 4 of that year's World Series.

The authors of the study—Kenneth Mandl '89, senior author and an HMS assistant professor of pediatrics, as well as HMS pediatrics instructors John Brownstein and Ben Reis—are all Red Sox fans. For Mandl and Reis, who grew up in Boston, their allegiance to the Sox is natural. For coauthor Brownstein, who moved to Boston from Montreal, becoming a Sox fan was an acquired taste, one that formed after he became infected with what he calls “game fever.”

In their bid to measure health-care use during pivotal sporting events, the Children's team did what baseball fans do best—they compiled the stats. Borrowing data from AEGIS, a disease-surveillance system used at Children's to analyze patient data and flag abnormal outbreaks and patterns of disease, the researchers tracked hourly visit rates to six area emergency departments—Children's, Beth Israel Deaconess Medical Center, Massachusetts General Hospital, Cambridge Hospital, Somerville Hospital, and Whidden Memorial Hospital—during each of the 2004 ALCS and World Series games. They then plotted the emergency-department visit rates against television viewership rates generated through local Nielsen ratings.



FEVER PITCH: Pedro Martinez works the mound for the Red Sox in the third game of the 2004 World Series.

Long hours of number crunching yielded a statistically sound inverse relationship between Red Sox viewership and emergency-department visits, telling the researchers that the bigger or more suspenseful the event, the quieter the emergency department.

During the lowest rated games—ALCS games 3 and 4 when the Sox were losing and could have been knocked out of the championship run—visits to the emergency room were about 15 percent higher than normal volume, even when the researchers adjusted the numbers to account for time of day, day of week, and seasonal factors that can spike visit rates, such as a flu outbreak. But after game 4, when the Sox were again contenders for a spot in the World Series, Nielsen ratings surged and emergency-department visits slumped—about 5 percent below normal volume. By game 7 of the league championship series and game 4 of the World Series, between 55 and 60 percent of Boston households had televisions tuned to the games and emergency departments

were hushed, operating at levels 15 to 22 percent below normal volume.

This study contrasts with a previous study by other researchers who found a spike in driving fatalities on football's Super Bowl Sunday, a situation that would likely increase the number of emergency-department visits. The HMS research team, however, looked at emergency-department visits only during the hours of the games themselves and not during the periods of celebration that followed the events. They examined all categories of visits, including routine health visits.

Do sports have a prophylactic effect? Probably not, say the researchers. Major televised sporting events likely just lead to more home-based triage—if it's not a heart attack or doesn't involve profuse bleeding, people simply exercise greater discretion when deciding whether to head for the emergency department.

The researchers' findings appear in the October issue of the *Annals of Emergency Medicine*. ■

THE CENTER CANNOT HOLD

IMAGES BLUR, STRAIGHT LINES CROOK, AND then the middle goes missing. This cascade of changes to a person's field of vision catalog the symptoms of neovascular macular degeneration, an age-related eye disease that can lead to blindness in a large number of the individuals it afflicts.

Knowledge useful to the prevention and treatment of neovascular macular degeneration has proven elusive. Researchers at the Massachusetts Eye and Ear Infirmary and HMS, however, may have found a clue: the bacterium *Chlamydia pneumoniae*. Their recent study found the organism in diseased eye tissue from five of nine individuals with neovascular macular degeneration. The researchers brought the significance of this finding into greater focus when they discovered that eye tissue from 20 individuals without age-related macular degeneration showed no sign of the organism. The results appear in the November issue of *Graefes Archive for Clinical and Experimental Ophthalmology*.

Age-related macular degeneration (AMD) has two forms, non-neovascular ("dry") and neovascular ("wet"). Each results from damage to the eye's macula, a small, centrally located part of the retina, the light-sensitive layer of tissue that lines the back of the eye and transmits nerve impulses to the brain. Tallies of the incidence of both forms show the disease currently affects between 3.5 million and 10 million people in the United States over the age of 65.

In the dry form of the disease, the layer of cells under the retina stops functioning well, causing the light-sensing cells of the overlying retina to malfunction or even disap-

pear. In time, this damage to the retina produces blank spots in the central portion of the eye's visual field. Same degree of vision loss occurs in 90 percent of such cases.

Wet macular degeneration is less common but considerably more serious. In this form, the macula becomes scarred by blood and fluid leaking from delicate new blood vessels that sprout beneath the retina. Damage and scarring occur quickly. Vision diminishes in a matter of days or weeks and continues to degrade over time. This form of the disease frequently leads to vision loss so significant that it qualifies as legal blindness.

The new study shows that infection by *C. pneumoniae* modifies cells that regulate normal eye function by increasing their production of vascular endothelial growth factor (VEGF), a protein involved in wet AMD.

"The fact that human eye cells infected with this bacterium increase VEGF production," says lead author Murat Kalayaglu, an HMS research fellow in ophthalmology at the Massachusetts Eye and Ear Infirmary, "could explain in part why VEGF levels are higher in many people with wet AMD."

This research, which builds on the scientists' earlier investigations linking AMD with an infectious agent, adds to a growing list of studies that have looked into the role of inflammatory mediators in AMD.

Although using antibiotics to control *C. pneumoniae* infection may ultimately be key to controlling this disease, Kalayaglu says more research is needed before individuals with neovascular macular degeneration can look to antibiotic therapy to fill the voids in their vision. ■



CLOAKED IN OBSCURITY: Age-related degeneration of the macular region of the retina, which is caused by blood leaking from newly formed vessels, is characterized by the loss of central vision that, in some cases, can become significant enough to qualify as legal blindness.

Every Breath You Take

THE TINY BUBBLES SEEM TO SIGH as they release their contents. Relief? Maybe. After all, they have held their air tightly for millennia. Or perhaps it's sadness, knowing they bear bad news.

Air that has been encased in Antarctic ice tells scientists that today's atmosphere has levels of climate-changing gases that are vastly higher than those bathing Earth during the past 400,000 to 650,000 years. Carbon dioxide alone is measured at concentrations more than 30 percent higher today than any Earth has seen in the past four hundred thousand years.

That's enough to make us sick, say researchers who produced *Climate Change Futures: Health, Ecological, and Economic Dimensions*, a report from the Climate

Change Futures Project at the Center for Health and the Global Environment at HMS. Paul Epstein, associate director of the center and an HMS instructor in medicine, led the group that produced the report. The three-year study was cosponsored by the center, the United Nations Development Programme, and Swiss Re, a global reinsurance company in Zurich.

The report finds that the climate change associated with rising levels of the gases that are produced when fossil fuels combust seriously undermines human health, alters ecosystems, and takes a big chunk out of the global wallet.

Climate-changing gases like carbon dioxide trap heat in the atmosphere. Over time, as rising levels of gases hold more heat, the climate refashions. Its

alterations can manifest themselves subtly, as incremental increases in temperature that take place over years, or they can show themselves in dramatic fashion, as with extreme weather events such as intense hurricanes and heat waves. Overall, according to the report, climate change promotes the production of plant pollen, soil bacteria, and fungi; alters the composition of species by favoring opportunistic weeds such as poison ivy and ragweed; and spurs the growth of populations of organisms responsible for infectious diseases. Such environmental insults are all the more significant because they harm our health.

The incidence and severity of respiratory ailments, for example, are exacerbated by photochemical smog, also



PHOTO: DAVID GUINN/ORBIS

WOMEN'S HEALTH

NEW TAKE ON TAKING TWO

Every dose of acetaminophen or ibuprofen a woman swallows increases her risk of developing high blood pressure, says a study in the September issue of *Hypertension* by a Brigham and Women's Hospital team led by John Forman, HMS instructor in medicine. The four-year look at painkiller use among 5,123 women in the Nurses' Health Studies found that for a group of women between the ages of 51 and 77, taking more than 500 milligrams daily (the equivalent of one extra-strength acetaminophen tablet) increased hypertension risk 93 percent; for a group of women between 34 and 53, the risk increased twofold. More than 400 milligrams daily (about two tablets of ibuprofen) raised risk 78 percent for older women and 60 percent for younger women. Aspirin use did not increase risk regardless of age.

GETTING THE RED OUT

More than 8 million people in the United States, predominantly women, suffer from dry eye syndrome. Without the proper kind or amount of naturally produced tears, their eyes feel gritty and damage easily. Findings in the October issue of the *American Journal of Clinical Nutrition* indicate women might look to their diets to prevent dry eye. Biljana Milonovic, HMS research fellow at Brigham and Women's Hospital, reports that responses from 37,000 women in the Women's Health Study show that consuming more omega-3 fatty acids—found in tuna and walnuts—reduced risk for the syndrome. Omega-6 fatty acids—in foods such as solid oils and animal meats—increased risk.

TIME WELL SPENT

Breastfeeding makes for a healthier baby, and, according to new research, a healthier mom, too—by lowering her risk for developing diabetes later in life. Research by a team led by Alison Stuebe, HMS clinical fellow at Brigham and Women's Hospital, shows that mothers who breastfed for at least one year were 15 percent less likely to develop Type 2 diabetes than mothers who did not breastfeed. And more was better—each additional year of breastfeeding brought a greater reduction in risk. For women with gestational diabetes, however, breastfeeding did not lower risk. The research, involving more than 157,000 women in the Nurses' Health Studies, appears in the November 23 issue of the *Journal of the American Medical Association*.

KICKIN' BACK WITH JOE

Coffee does not increase women's risk for high blood pressure but cold beverages do. This finding, in the November 9 issue of the *Journal of the American Medical Association*, stems from a 12-year study of 155,000 women in the Nurses' Health Studies at Brigham and Women's Hospital. Women who drank regular or diet cold had an increased risk for hypertension—26- to 46-year-olds who daily drank four or more sugared colas had a 28-percent increase in risk over women who drank less than one. For women between 43 and 71, drinking four or more colas daily increased risk 44 percent over peers who drank less than one. For diet cola drinkers, consuming four or more of the beverages daily raised risk 19 percent for the younger group and 16 percent for the older group. The study's lead author is Wolfgang Winkelmoeyer, HMS assistant professor of medicine.

known as ground-level ozone, which is formed by car emissions, diesel particulates that deliver pollen and molds deep into the lungs, and the soup of air pollutants and aeroallergens carried on masses of unhealthy air.

Children are particularly vulnerable, says the report, especially those living in poor communities in the inner cities. Epstein speculates that higher concentrations of ragweed pollen as well as pollen from other plants may have spawned the rise in asthma rates being registered in the United States—a fourfold increase in cities in recent years alone—and throughout the world. Treating asthma in those under the age of 18 costs the United States an estimated \$3.2 billion per year.

Another area of concern the report raises is the growth in infectious diseases. In the past three decades, as many as 30 infectious diseases have emerged. The ten case studies in the report outline how climate change also contributes to the increased prevalence of diseases such as malaria, West Nile virus, and Lyme disease.

Lyme disease, for example, is on the rise in North America because increasingly milder winters cannot effectively check the proliferation of the ticks that carry the disease from animals to humans. The report says a twofold increase in welcoming habitats for these ticks is expected by the 2080s. Warmer and wetter weather also promotes the breeding and range of mosquitoes that carry malaria and animals that transmit the West Nile virus.

To stem the health and environmental damage caused by increases in carbon dioxide and other fossil-fuel combustion products, the report's authors recommend curtailing the use of such fuels by replacing them with clean energy alternatives, "green" buildings, and transportation modes that exploit hybrid technologies. ■



ILLUSTRATION: EDDIE WELLS

Gaps in health insurance
have created a new caste
system in the United States.

the death Spiral

BY RUSHIKA FERNANDOPULLE

BY THE TIME WE MET HER, GINA HAD ALREADY ENTERED this country's social underclass, a victim of the nation's health-care death spiral. A plain and weary young woman with faded blond hair, Gina suffers from chronic stomach pains that have worsened over time. She had self-diagnosed the problem as a mixture of indigestion and the stress brought on by her financial situation. She works at FabuCuts, a national chain specializing in low-cost haircuts for walk-in customers. In an average month of working nine-hour days, she takes home about \$900, barely enough to cover her rent, utilities, car insurance, food, and payments for the \$15,000 she borrowed to attend hairdressing school. Although FabuCuts offers its employees health insurance, Gina cannot afford the monthly premium, deductibles, or copayments.

PHOTO: STEPHEN WEBSTER



The issue of uninsurance affects not just the uninsured, but everyone in the nation.

This lack of coverage has become a crisis. When her stomach troubles first started, Gina took over-the-counter antacids, but when the pains became unbearable, she went to the local emergency room. There a physician diagnosed a bladder infection, prescribed an antibiotic, and told her to see her regular doctor if she didn't improve. When she tried to see her previous physician, the office required cash up front because she was uninsured. Only then was she allowed to see a physician assistant, who diagnosed a kidney infection and gave her more antibiotics. The pain continued and a few weeks later she returned to the emergency room, where she received a diagnosis of gallbladder problems and a \$5,000 bill. Another visit to her doctor led to another trip to the hospital, a \$4,000 bill, and a recommendation to see a surgeon. Yet without insurance she must pay \$200 before the surgeon's office will even schedule a consultation.

At this point, Gina's pain comes and goes; she knows stress makes it worse, but the condition itself causes considerable stress. She and her husband—who earns \$6.25 an hour and does not qualify for health insurance—want to start a family, but can't even consider children in their current situation. Gina knows her gallbladder could rupture if left untreated, causing her to lose parts of her bowel, become infertile, or even die. She has learned to live with the pain, but not with the fear. She knows that even if she could scrape together the \$200 for the surgical consultation, she could never afford the surgery. What frustrates her most is that she and her husband work hard and yet find themselves falling only further behind.

DOES IT MATTER TO BE UNINSURED?

Several years ago I found myself at a health care symposium sitting next to Susan Starr Sered, a medical anthropolo-

gist at Harvard Divinity School. One of the speakers shared survey results that seemed to deny Gina's experience. The survey, sponsored by the Kaiser Family Foundation in 2001, found that 55 percent of all American adults agreed with the statement that it doesn't really matter if you're uninsured because you can get all the care you need anyway at an emergency room or a free clinic.

Susan, knowing my background as a practicing internist who had long worked in the area of health care policy, leaned over to ask me whether this belief was true. I pointed out that the Institute of Medicine, a respected, non-partisan federal advisory board, had recently issued a six-volume series summarizing hundreds of peer-reviewed studies showing that being insured does indeed matter. Compared to those with insurance, uninsured people get diagnosed later, suffer more pain, endure more complications, experience worse outcomes with virtually every major chronic condition, and die sooner.

The problem, Susan said, was that such data convinced no one. What persuades the American public, she added, are stories, not data—and perhaps that's what the national debate is lacking. We decided to leverage our disparate backgrounds and perspectives to get a better handle on the issue. We would travel across the country to ask consumers, providers, and advocates a few simple questions: What does it mean to be uninsured in America today? What is and is not possible for uninsured people, and how does being uninsured affect their lives?

We decided to focus on five areas of the country with different patterns of uninsurance: the Mississippi Delta, where residents live in stark poverty; the *colonias* of southern Texas, whose population has the highest rate of uninsurance in the nation; rural northern Idaho, where the collapse of the mining

and logging industries has left many uninsured; urban areas in central Illinois from which large industry is fleeing; and eastern Massachusetts with its increasing population of the "middle-class uninsured."

One year and more than a hundred interviews later, we had gained a much sharper understanding of the issue. We were touched by the willingness of people like Gina to spend hours with us, sharing deeply personal stories of how their lack of insurance has undermined their health and lives. We also met doctors and other providers who have accepted huge cuts in pay, limited access to resources, and scanty back-up to help underserved populations. The problem, we concluded, is structural, affecting not just the uninsured, but everyone in the nation.

THE ROAD TO NO CARE

We are all too familiar with the figure of 45 million Americans who chronically lack health insurance. But there are many others who find themselves cycling on and off coverage depending on their employment, their life situations, and changing eligibility criteria. The Commonwealth Fund estimates that 85 million people may be uninsured at some point in any given three-year period and that tens of millions more are significantly underinsured, meaning their coverage has major gaps, such as for mental health services, medications, or pre-existing conditions.

Our interviews with uninsured people supported the Institute of Medicine data: Being uninsured absolutely matters when you are trying to obtain all the health care you need. While it is true that hospitals by law must diagnose and treat immediately life-threatening illnesses and injuries and respond to the imminent delivery of a baby, this mandate excludes many conditions. Over and



over again we found the uninsured had difficulty getting preventive services; controlling chronic diseases, such as diabetes and asthma; or even managing serious but not emergent conditions, such as Gina's gallbladder disease.

We were particularly struck by the problems people faced getting dental care. Nearly everyone we interviewed had lost several teeth; some had even resorted to pulling them out themselves to stop the pain. Similarly, mental health treatment was an issue for almost everyone. Ironically, the system wouldn't provide even a few dollars for a doctor's visit or medications to manage hypertension or diabetes until those conditions reached a critical point, such as causing kidney failure or irreversible disability. Only at this end stage would people become eligible for Medicare benefits.

Even when people received care in an emergency room, they were often billed. Indeed, nearly everyone we met owed thousands or even tens of thousands of dollars to a hospital or doctor. Many fielded calls daily from collection agencies and had watched their medical debts ruin their credit ratings.

We weren't surprised to find these detrimental effects among the uninsured, but we found striking the effect uninsurance was having on society as a whole. A bedrock principle of the American Dream is the promise of a better life. If we work hard and play by the rules, we feel, we have a chance to get ahead, regardless of who we are. We discovered that the issue of uninsurance was seriously undermining this possibility of upward mobility and, indeed, was causing a growing number of Americans to become stuck at the bottom.

In our book *Uninsured in America: Life and Death in the Land of Opportunity*, we describe this phenomenon as a "death spiral," created because almost alone among advanced countries the United States structurally links health insurance to employment. As the Institute of Medicine data show, having health insurance carries a strong link to being healthy. But we also know that being healthy makes you more likely to have and keep a job, particularly one that provides health insurance. Thus we have created a circular dependency, which, if one part starts to fail, leads to a downward spiral.

We met several people, for example, who had lost a job—and thus health coverage—because of a layoff or a need to stay at home to care for a loved one. Without insurance, health problems—particularly chronic ones—worsened, making it harder to find employment and impossible to regain health insurance. We met many others whose descent into the spiral began with an illness that caused them to stop working, a particularly common occurrence among people with mental illnesses. Unemployment led them to lose their health coverage precisely when they needed it most, causing them to get sicker and become less able to regain their jobs and insurance.

For society, the result of this death spiral is what we call the "caste of the ill, infirm, and marginally employed." We use "caste" intentionally because unlike "class" it connotes permanency. Several factors conspire to solidify this status. The first is the person's general health status—it's difficult to land a job if you're sick. The second is personal appearance. Being uninsured leaves physical marks over time: poor skin, limps, chronic coughs, and, most commonly, poor teeth.

The crisis of the uninsured is too often and while this is important, we must not forget

Because of these physical difficulties many people at the bottom of the spiral cannot get employment that involves face-to-face contact; instead, they are forced into jobs that typically do not provide health coverage. The third and final issue is debt burden. Medical debt locks people into this caste. With ruined credit ratings they cannot acquire credit cards, buy houses or cars, or even rent new apartments.

BREAKING THE LINK

Experts in this country have offered no shortage of proposals for tackling the issue of the uninsured. Nearly all major advocacy groups and national political candidates have put forward plans. The goal of our project was not to add another proposal to the mix, but to evaluate what was already on the table.

Most of the current debate in Washington and in state capitals revolves around incremental solutions, whether expanding existing public programs such as Medicare or Medicaid or mandating that employers cover individuals. The problem is that none addresses the root cause of the death spiral: the link between employment and health insurance. This link may have made sense in an era when health coverage was inexpensive and people typically worked for the same company throughout their careers, but in an era of rising health care costs, transient patterns of employment, and the pressures of global competition, it has become obsolete.

Those on both ends of the political spectrum agree that we need to break the link between employment and insurance; what they argue about is how to do so. One way is to make health insurance a private matter, with individuals left to purchase coverage on their own—much as we now fund our retirements with 401(k) plans. The problem, of course, is that while this model would work for those who are educated and well off,

it would leave those like Gina behind, unable to afford the premiums for private coverage.

An alternative would be to make health insurance the government's responsibility, and, like Canada, move to a single-payer system. Although this approach would dramatically reduce the bloated overhead in our current health care system—and be far more equitable—many fear such a plan would lead to long waiting lists for elective procedures, similar to what occurs in many other countries, and would hamper future health care innovation.

The solution likely lies somewhere in the middle. A possible analogy can

be found in how we deal with primary and secondary education in this country. From before the Revolutionary War, we have believed that education is good not just for individuals but also for society as a whole. Thus we make the provision of education to children a public rather than private responsibility.

We do not, however, make this the only way to obtain an education. Parents can choose to pay for their children to attend private schools, tutoring programs, and a host of other educational options. This system allows for the diversity and innovation that seem critical to U.S. culture.

A Larger Frame

The debate over how to respond to the crisis of the uninsured usually centers on alternative models for financing health care. But many argue that we need to think bigger before we can truly address the health care needs of the underserved.

Tackling the issue of the uninsured may mean radically changing not only how health care is financed but also how it is delivered. Perhaps the primary problem is not really coverage, but cost. Mark Smith, chief executive officer of the California HealthCare Foundation, argues that as long as health care costs about \$6,000 per person per year, we will never muster the political will to spend that much for each person in the United States. If we could deliver good care for half that, though, the task would become less daunting.

During the past year I have been working with Arnold Milstein of Mercer Consulting, the California HealthCare Foundation, and others on the Bug Project, an initiative aimed at designing a new health care model that delivers better quality of care to the underserved at half the current cost. Focusing on the sickest 20 percent of this population, our model combines high-intensity, proactive health management with a great deal of care and education by phone and email, information-technology-enabled physician visits when necessary, and evidence-based referrals to specialists and tertiary care practitioners. By increasing the investment in well-designed primary care, we hope to improve quality and decrease overall spending. We are now assembling a cohort of institutions to test and refine our model.

Even this sort of wholesale redesign may not suffice, however. Our visits to places with large populations of uninsured people convinced us that the problems stretch beyond health care. Even if uninsured people received health insurance, many would still be unable to access care because they lack providers, transportation, childcare, or a command of the English language. In addition, many of the health problems the uninsured experience are exacerbated—if not caused—by limited access to nutritious food and safe places to exercise, poor educational opportunities and jobs, polluted living conditions, and generally high levels of stress. Although none of these issues should prevent us from seeking ways to provide better health care for the uninsured, each should motivate us to think more broadly about the types of interventions needed.

couched in the language of economics, that the issue is a deeply moral one as well.



Although one can certainly argue that grave disparities in quality exist among different kinds of schools, those gaps are considerably smaller than the gaps in health care coverage.

The current situation must be changed. My lasting response to all our interviews was one of shame—shame that such a rich nation can allow so many of its citizens to suffer because of an obviously broken system. The crisis of the uninsured is too often couched in the language of economics, and while this is certainly an important aspect, we must not forget that the issue is a deeply moral one as well.

We noticed that Gina, the stylist at FabuCuts, tried to keep her mouth closed even while speaking. When asked

why, she explained that a cavity was rotting away one of her front teeth because she hadn't been able to afford dental care for three years. "You see," she said, "there's a hole there, and I've never had one there before." Gina was embarrassed; because of her teeth, she was beginning to look like a member of the caste of the ill, infirm, and marginally employed.

We must do better to create a system in which hard-working people like Gina can take care of their health issues—and have a shot at upward mobility. When we turned to leave and told Gina again that we couldn't see the gap in her teeth unless we practically stuck our heads into her mouth, she broke out in a grin that lit up the entire room. For a moment, her pain and stress receded, and

she beamed a thousand watts of delight. Plain Gina turned into the beautiful young woman she is, and should be. ■

Rushika Fernandopulle '94 is an internist on staff at Massachusetts General Hospital. He was the first executive director of the Harvard Interfaculty Program for Health Systems Improvement and is cofounder of Renaissance Health, an innovative primary care practice in Arlington, Massachusetts. He can be reached at rf@renhealth.net.

*Gina's story was taken from the recent book Fernandopulle coauthored with Susan Starr-Sered, *Uninsured in America: Life and Death in the Land of Opportunity* (University of California Press, Berkeley, 2005). While Gina's story is real, her name and some details of her life have been changed to protect her privacy.*



What will it take to wake
the nation up to the need
for universal health coverage?

BY PAT MCCAFFREY

under covered

WITH MORE THAN 45 MILLION UNINSURED AND an additional 20 million considered underinsured, the United States remains one of the few industrialized countries without universal health coverage. At the same time, we spend more per capita than any other country on medical services, and costs are rising rapidly. Yet issues of access and equality in health care barely catch the attention of the general public or politicians, with the exception of daily reporting on the confusion and anxiety surrounding the new prescription drug benefit for those on Medicare.

PHOTO: ANN CUTTING/WORKBOOK STOCK/GETTY IMAGES

The option—to remain one of the few world that does not cover everyone as a matter

We asked experts on health care delivery and policy, drawn from the ranks of Harvard Medical School's alumni and faculty, what it would take to achieve some form of universal health coverage in the United States. Their forecast, to a person, is for stormy weather ahead, followed by clearing. Most believe the situation will get worse, perhaps much worse, before significant change occurs. Escalating difficulties for businesses, middle-class workers, and physicians are predicted. When the storm passes, its aftermath should yield a more equitable, more efficient, and possibly even cheaper system. But until then, the experts say, hold on because we're in for severe turbulence.

Despite differing visions of what the end product should be, our contributors all strongly agreed that we must reach the goal of universal coverage. To some, getting there means tweaking our current system to create an entry point for every person, whether young or old, rich or poor, self-employed or unemployed. But to others, achieving universal coverage means a dramatic restructuring toward a single-payer, government-sponsored plan, with little or no role for private insurers.

Whether change comes incrementally or all at once, whether the solution is a single payer or a patchwork of private programs, the hurdles are much the same.

The escalating cost of medical care, opposition to new taxes, lack of political will and leadership, tepid public support, and the entrenched interests of labor, business, insurance agencies, and pharmaceutical companies all present formidable roadblocks to achieving universal health insurance.

The option—to remain one of the few industrialized countries in the world that does not cover everyone as a matter of course—seems unimaginable. So we asked the experts to exercise their imaginations and describe scenarios in which our society could be pushed to a tipping point that would make universal coverage inevitable.



PHOTO: GARY BUSS/TAXI / GETTY IMAGES

industrialized countries in the of course—seems unimaginable.

FATE OF THE UNION

Today, political interest in universal health coverage is at ebb. Periodically, though, the issue gathers steam, most recently in the early 1990s. We all remember the winning mantra of the 1992 presidential race: "It's the economy, stupid." Unknown to many, however, was the next bullet point on Bill Clinton's agenda during that campaign: "Don't forget health care."

What followed that election—the flurry surrounding the Clintons' health care proposal and its utter failure—succeeded in knocking health care off the national agenda, a situation that persists.

"Politicians have considered the health care issue to be like the third rail, something to avoid at all costs," says James Bernstein '52, a retired gastroenterologist and past president of the Long Island Coalition for a National Health Plan. Bernstein is active in educating physicians and lobbying legislators for a single-payer national health insurance system.

The plan Bernstein and 13,000 other doctors support was outlined by the Physicians for a National Health Program in the August 2003 issue of the *Journal of the American Medical Association*. The plan resembles Medicare, with the federal government buying medical services and supplies for all citizens from private providers. Drafted into a legislative proposal sponsored by U.S. Representative John Conyers, Jr., a Democrat from Michigan, the bill has attracted 62 cosponsors. But that plan, or any other with a chance of making a significant difference for the uninsured population, is unlikely to succeed anytime soon.

Ideology and the current political climate are both contributing to the problem, Bernstein says. "The Bush administration isn't in favor of any domestic program that doesn't benefit the rich. So they're not interested in

doing anything fundamental to cure the health care crisis."

Universal coverage, whether single payer or some other configuration, would mean an increase in taxes, and politicians and the public will need to face that reality, says Thomas Lee, Jr., HMS professor of medicine and network president for Partners Health-Care in Boston. "My optimistic scenario for universal coverage is that we have good leadership, which helps us confront the question of just how generous we are as a nation. Are we willing to let people within our eyesight, or just out of our field of vision, go without insurance? Or are we ready to pay more taxes and provide coverage for everyone? I think universal coverage is possible with good leadership. That, of course, means waiting until the next presidential election, at least."

Steffie Woolhandler, HMS associate professor of medicine at Cambridge Hospital, cofounder of Physicians for a National Health Program, and a vocal advocate for a single-payer system, believes political movement could start with one charismatic leader. "If there were a congressional candidate," she says, "who ran on a national health insurance platform and won unexpectedly—that could provide the kind of breakthrough that gets everyone talking about health care again."

Woolhandler points to the example of Democrat Harris Wofford, who defeated heavily favored Republican Richard Thornburgh in the 1991 U.S. Senate race in Pennsylvania. "In the last few weeks of the campaign, Thornburgh ran TV ads all over Pennsylvania saying Wofford supported socialized medicine and a single-payer system," Woolhandler says. "Well, lo and behold, Wofford won. It was a real breakthrough. I was in Washington at the time, and it felt like a lightning

HOW DID WE GET INTO THIS MESS?

The U.S. health insurance system is confusing, complicated, and inconsistent—a harsh state of affairs that can be better understood by looking backward. Through the lens of history, our lack of universal coverage, nearly alone among industrialized countries, appears surprisingly inevitable.

Franklin Delano Roosevelt first proposed universal health care in his Social Security Act of 1935. Yet he quickly dropped this feature of the act because of its high expense—and the efforts of the American Medical Association to scuttle the idea. Even back in the 1930s, the costs of health care coverage appeared formidable, and the lack of political will to transfer those costs to taxpayers became a major limiting factor in the government's playing a sizable role in such a system.

In the 1950s, two events conspired to thwart universal coverage and to foster growth of a private health insurance market. Labor unions, recognizing the burden that health care costs placed on their members, began to bargain for health insurance. At the same time, the National Labor Relations Board ruled that health insurance was a fringe benefit and therefore not subject to taxation. As a result, the private health insurance market exploded, and employer-sponsored private health insurance became the foundation of our current system.

With the rapid success of the private health insurance market, attention soon turned to the inadequacies of existing coverage, shortfalls exacerbated by escalating health care costs. Also under scrutiny was the plight of those not covered—the poor, disabled, unemployed, and retired, who couldn't take advantage of the growing number of services and therapies available.

In response to this glaring social disparity, legislators began incrementally addressing the health care needs of vulnerable populations. Each step—including the Social Security Disability Insurance law passed in 1956 and the Medicare law passed in 1965—was helped along by Social Security's immense popularity and bipartisan support. In *Universal Coverage: The Elusive Quest for National Health Insurance* (University of Michigan Press, 2005), author Rich Moyes notes that, in the 1960s and 1970s, both administrators and legis-

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"If physicians were to acknowledge and join with other forces, they could make

bolt coming down from the sky, with everyone suddenly understanding the importance of health care reform and the real political possibility of winning support with a national health insurance plan."

As it turned out, that election foreshadowed Clinton's win in 1992. "I wasn't happy with the ultimate result of his proposed health care plan, which was nothing," Woolhandler says, "but that Wofford election is why the political debate really heated up and propelled much of the Clinton discussion."

LABOR PAINS

A second trigger for a drastic change in policy, Woolhandler says, could be a spectacular business failure involving a major U.S. corporation. General Motors, for example, now spends roughly \$1,500 per car to provide health coverage to its workers, both active and retired. "In the auto industry," Woolhandler says, "people are saying GM might go under. If the entire company is at risk, will it maintain an ideological opposition to a reform that could actually save the business?" The failure of a major automaker, Woolhandler believes, might begin the end of the uniquely American system of employer-based health insurance and clear some obstacles to a more comprehensive program.

Or perhaps employer-sponsored health care could go out with a whimper rather than a bang, with a progression of smaller corporate crises. "If Ford and General Motors continue to teeter, and if policymakers recognize that a big part of the cause is an out-of-control health care system, one result could be an abrogation of employer-based health care," says Donald Berwick '72, president and chief executive officer of the Institute for Healthcare Improvement in Cambridge. "The car makers could conceivably turn to government and say, 'This isn't our job.'"

Although Berwick concedes that this scenario is unlikely, he notes that when

General Motors discovers that a key engine part can be made less expensively in another country, its representatives find a way either to buy it or to produce it more cheaply themselves. "When it comes to health care, other countries have created systems identical to ours, or even better, at half the cost," he says. "Industry leaders have not yet mapped that idea into their corporate plans, and I don't know why they haven't. In communities where a



small number of employers buy most of the care, for example, they could insist on a redistribution of resources to achieve a better system."

FALLING DOWN ON THE JOB

The specter of employers dropping health coverage raises the most talked-about scenario for change. In short, this version predicts the situation will get so bad for the average citizen that a nationwide popular movement will spring up, and public opinion will drive political action toward universal coverage.

Unfortunately, as it stands today, the lack of universal health care disproportionately affects the poor, and the poor tend not to vote. The elderly do, and

they have succeeded in increasing the government's role in health care for themselves. That leaves the people in the middle, says David Blumenthal '74, director of the Institute for Health Policy at Massachusetts General Hospital.

"Realistically, what we need is much more pain and suffering on the part of currently covered populations that are politically influential," Blumenthal says. "It's a matter of cost and benefit. In order to tolerate major changes in public policy, especially changes that might involve a greater role for government, Americans will need to feel pretty desperate. Once they've lost faith in the current system, once they realize it isn't meeting their needs, they'll be willing to walk the plank to a new way of relating to the health care system."

Is there a critical number of uninsured required to tip the balance? "It's clearly not 16 percent of the population," Blumenthal says. "It may be more like 25 percent. It has to be a substantial number of employed people who can't sleep at night because they're afraid their insurance will soon disappear."

Talmadge King, Jr. '74, chief of medical services at San Francisco General Hospital, had once predicted a threshold of 40 million uninsured, then watched that threshold pass several years ago. "I thought when the number reached 40 million the pressure would be so great we'd be forced to deal with it," he says. "But we're still skating by. I'm not sure what the number will have to be before enough people get upset about our current crisis."

At his hospital, King has noticed what he calls a "not-so-subtle shift" in the kinds of patients he encounters. "We've always taken care of the working poor," he says, "but the range of working poor has expanded. We usually see restaurant workers and day laborers. But now we also see high school teachers, department store clerks, and humane society employees. We wouldn't have seen these people in the past

some solutions to the problem a huge difference."

because they carried insurance. But they're no longer covered."

King predicts that one stimulus for change will be the growing discontent of doctors. "Physicians whine, but in fact medicine is still an outstanding career," he says. "When the erosion of the profession reaches a certain point, though, the conversation will begin again nationally. Right now no one wants to talk about it."

Some physicians are talking about it, however. In one widely publicized 2004 study by Woolhandler and colleagues, a random poll of Massachusetts doctors revealed that two out of three believed a single-payer solution would be best for their patients. Whether that result translates nationwide remains to be seen, but Woolhandler is working hard to mobilize physicians as advocates for the single-payer system. Meanwhile, the American Medical Association has taken a different tack, favoring government support of private insurance plans to achieve universal coverage.

Whatever their views of the best solution, physicians have a special role to play in the struggle toward universal coverage, says Rashi Fein, HMS professor of the economics of medicine, emeritus. "Doctors can play a tremendous role," he says, "because despite all the complaints about the medical care system, despite all the concern about conflict of interest, the general public believes in the authority of doctors. If physicians were to acknowledge some solutions to the problem and join with other forces, such as the business community, they could make a huge difference."

WAITING TO UNVEIL

An important precondition for achieving universal coverage, no matter its final details, will be the public's acceptance and admission that everyone in the nation is entitled to health care. Health care must be seen as a common good, similar to education, explains

Berwick. "Countries that offer universal coverage as a matter of policy understand that. As step one, Americans should immediately acknowledge health care as a human right."

Next, everyone should understand that despite its complexities, the goal of achieving universal coverage in the United States presents no insurmountable technical problem. Says Fein, who teamed with former U.S. Surgeon General Julius Richmond to write *The Health Care Mess: How We Got Into It and What It Will Take To Get Out* (Harvard University Press, 2005), "It's not a problem of our not knowing how to do it. There are enough models out there, and we are bright enough to figure out which ones can be adapted to our circumstances."

An examination of the experience with Medicare may show the way forward, according to Fein. "Medicare took eight years from the time it was introduced to the time it was passed," he says. "Every year the committees voted it down, and it always popped back on the agenda the following year. It kept returning in no small measure because of the persistence of senior citizen groups and concerted efforts to educate the public on the issue. There was organization, and there was determination. The Clinton program, in great contrast, was offered just once." Fein pauses. "And you never heard anything about it again."

"What's required," Fein adds, "is a process in which this issue stays on the agenda long enough to educate members of the public, to get them to understand the importance of universal coverage, to allow them to assess the wisdom of different approaches. Eventually, achieving universal coverage won't be a top-down process; it's going to come from the grassroots. It's time to resume the debate." ■

Pat McCaffrey is a freelance writer based in Auburndale, Massachusetts.

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lators believed the incremental approach would eventually lead to universal coverage.

Ironically, it was a Republican president, Richard Nixon, who brought the United States the closest it has been to universal coverage. Nixon's efforts in the early 1970s were opposed and ultimately dismantled by unions and by prominent Democrats who believed his plan didn't go far enough. Nonetheless, his administration's expansion of benefits led to a dramatic acceleration of health care costs borne by the federal government. Some have argued that it is the escalating expense that makes further expansion of benefits more difficult: How can we add more benefits when we can't afford the ones already on the books?

The 1990s gave us the failed health reform plan proposed by the Clinton administration. With a structure devised by a host of health policy experts, politics proved its undoing. No matter how well conceived, the Clinton plan was doomed because it didn't provide bipartisan lawmakers with sufficient incentives to sign on to it. The health insurance lobby played a key role in the demise of the plan as well.

The Medicare Modernization Act, which took effect in 2004, dramatically expanded benefits. With federal coverage for medications, benefits once again increased—but concerns about costs produced a convoluted benefit structure. In addition, lobbying by the pharmaceutical industry removed the most obvious opportunity for effective cost containment—the ability to negotiate drug prices.

Several states are now poised to provide universal coverage to children. This appears to be the next incremental step toward universal coverage. Covering children is attractive because it is relatively inexpensive. Nonetheless, as we look back through the past six decades, each attempt to expand health care coverage has been blocked or limited by the efforts of self-interested groups—including doctors, hospitals, insurance companies, and the pharmaceutical industry—to maximize their own slice of the pie. Further progress may only be achieved when all entities in the medical care delivery system step back from a position of maximizing their own income. Maybe they can be encouraged to see a greater good for all Americans: universal coverage. ■

Timothy G. Ferris '92 is an HMS assistant professor of medicine and pediatrics at Massachusetts General Hospital.

For people without health insurance, a serious illness can start a downward spiral that may even lead to homelessness.

Preaching to the Exiles

BY JAMES J. O'CONNELL



LATE ONE WINTER WE GATHERED IN THE BASEMENT OF St. Anthony Shrine in the heart of Boston to remember a man whose stubborn charm had enchanted and exasperated us during his two decades on the streets of our city. Three days after Christmas, in frigid and snowy weather, he was found near midnight on a cement bench two blocks from Massachusetts General Hospital with a core body temperature of 78°F. Earlier that evening our team had pleaded with him to go to a shelter, but he had insisted he was fine. His cause of death remains uncertain; he likely suffered a seizure in the hours before he was found. Heroic measures to warm him in the emergency room with heated saline and bilateral chest tubes failed to restore a heart rhythm.

During our subterranean ceremony, we sang to piano, guitar, and trumpet accompaniment; read Old Testament stories and poems of loss and hope; and alternated tears and chuckles as we shared stories. Assembled was the man's wide circle of caregivers: emergency-room nurses and social workers, outreach street workers, therapists, and our own street team of doctors. This ebullient man had logged a legendary number of visits to the MGH emergency room, earning him a virtually permanent gurney in the hallway. He always blew kisses to the nurses, graciously accepted all meals, and offered profound thanks to anyone who cared for him. He was on a first-name basis with the staff of the emergency-service team of the Massachusetts Department of Mental Health. The nurses at a local dual-diagnosis unit lamented the loss of a man who had tried literally hundreds of detoxifications but never managed to achieve more than a few weeks of sobriety. We couldn't help but share a single sad observation: if only he had realized during his lonely decades on the streets the number of lives he had touched and how many people would gather to celebrate his life and memory.

I last saw him four days before his death, as I was finishing rounds at MGH

on Christmas Eve. I got off the elevator on one of the clinical floors and found him sitting proudly by the window in the small lobby area, looking off toward the frigid Charles River as he ate a turkey dinner. A nurse who had befriended him during his innumerable admissions had seen him alone in the main hospital lobby and had coaxed him up to the floor for a meal and a flurry of attention by the other nurses and the medical team. He was ecstatic and grateful.

"The mashed potatoes are lumpy and no turnips tonight," he told me. "But this turkey would be succulent with a little chardonnay!"

His shoes were warming on the radiator, and his swollen feet were a podiatrist's textbook: hammer toes, bunions, stasis dermatitis, old frostbite, onychomycosis, and the marked lichenification and pitting typical of immersion foot. The stench was stultifying, and the evening visitors kept a wide berth. I invited him to spend the holiday at our care facility for the homeless, but he declined with an expansive gesture; he had all he needed for now.

We knew he was a 49-year-old Air Force veteran and a former high school hockey star, but other than those details his past was shrouded in mystery. He had once admitted that he had been married



PHOTO: HARRY SCULL / THE BUFFALO NEWS

and had lost contact with his two children. After his death, though, we could find no family members, and his hulking body remained unclaimed in the city morgue for the requisite six months before cremation and internment in a paupers' field. He had navigated the labyrinth of our medical, mental health, and substance abuse systems without health insurance, exposing our inability to communicate across systems while relegating him to frequent use of our emergency rooms, acute psychiatry services, and detoxification units.

Homelessness magnifies poor health, exposes those huddled in crowded



shelters to communicable diseases such as tuberculosis and influenza, complicates the management of chronic illnesses such as diabetes and asthma, makes health care harder to access, and presents vexing obstacles that exasperate health care providers and confound delivery systems. These problems are amplified dramatically by the lack of health insurance that is common in this impoverished group of our citizens. Without insurance, prevention is a distant dream, management of chronic illnesses becomes immeasurably complicated, and health outcomes are dismal.

ROUGH LANDING

The experience of illness and suffering among the homeless in urban and rural America is complex and poorly understood. This man's story is numbingly familiar to physicians, nurses, and other clinicians who witness the lonely, desperate, and often painful deaths of homeless men and women in our urban hospitals and academic medical centers. Death is a constant, though erratic, companion for people living in shelters and on the streets. We know from studies in the United States and other countries that homeless people suffer mortality rates that are at least

HOMELESS FOR THE HOLIDAY:
A homeless man pushes a cart
filled with his belongings on
Thanksgiving morning.

Behind the numbing statistics are breathtaking by people playing impossible hands dealt

fourfold greater than those found in the general population.

The Boston Health Care for the Homeless Program (BHCHP), for which I work as a street team physician, seeks to ensure consistent, continuous, and high-quality health care for homeless men, women, and children. Dedicated teams of doctors work with nurses, nurse practitioners, physician assistants, and social workers in a system that integrates 70 shelters and outreach clinics with three hospital clinics—Boston Medical Center, Massachusetts General Hospital, and Lemuel Shattuck Hospital. We provide almost 10,000 people with comprehensive medical, psychiatric, and oral health care each year.

Our model of care is predicated upon enduring and personal relationships between patients and their doctors and other caregivers, best initiated and nurtured in familiar places far from the bureaucracy of hospitals and health care institutions. Ironically, this harkens to an earlier era in U.S. medicine when home visits were common and essential to the doctor's understanding of the lives and special situations of each patient and family. Life in the shelters and on the streets has an inescapable immediacy and many obstacles that render health care a distant priority. Appointments in clinics and offices are rarely successful, and doctors and other clinicians must venture out to visit and understand the homeless person's shelter and street "home."

Rough sleepers are an eclectic group of resolute individuals who embrace a modern brand of rugged American individualism and eschew the rules and crowds of the shelters. Feisty and complex, stubborn and uncompromising, these people alternately exasperate us and endear themselves to us. Despite frequent headlines and a ubiquitous presence on the urban American landscape, the tragic lives of these impoverished individuals remain obscure. Like Jeremiah preaching to the exiles, rough sleepers are modern urban nomads who dwell under bridges, in subway tunnels,

and down back alleys—modern prophets on the fringes of society who emerge to rant, regale, and condemn a world gone astray. Many adopt biblical "street" names, with Isaiah, Ezekiel, and Adam as common first names and Zion and Israel as occasional last names.

What happens to these elusive rough sleepers over the years is not known. Anecdotes, headlines, and stories abound; the science is wanting. In 2000, nearly 250 people lived year round on the streets of Boston. To help understand the health consequences of such exposure to the extremes of weather, temperature, and violence, we chose to follow a cohort of almost half that number. Most had been living on the streets for at least a decade, sometimes two. One-quarter were women. The average age was 47, with a range of 32 to 82 years. The demographics, including race and ethnicity, did not differ significantly from those of the general population of Boston. From 2000 through 2004, our street team cared for these individuals and tracked their whereabouts. We lost contact with only five during that time, a tribute to the rich network of services and collaborations among service providers, advocates, and city and state agencies, including the police, the emergency medical services, hospital emergency rooms, and the Massachusetts departments of public health and mental health.

In five years, 28 percent had died and another 5 percent had been placed in nursing homes with chronic and debilitating illnesses. Another third had been placed in housing or long-term programs, and a final third still lived on the streets. The causes of death were primarily chronic diseases that were often preventable, such as cancer, cirrhosis, obstructive lung disease, and heart failure; only two people died of hypothermia and exposure. The group's morbidity and mortality rates were staggering. These outcomes represent astonishing health-care disparities that in another population would constitute a public health emergency.

Our hypothesis that these individuals had fallen through the holes in our safety net and avoided our health care system proved resoundingly wrong: the 119 individuals in our study had an aggregate 18,384 emergency-room visits between 1999 and 2003. We are only beginning to understand the costs of neglecting those who live on our streets.

Behind the numbing statistics are breathtaking stories of desperate courage by people playing impossible hands dealt to them by fate and poor luck. A 35-year-old man died of AIDS several years ago after months of suffering through repeated bouts of pneumonia and a profound wasting syndrome. He left innumerable hospitals and nursing homes to seek independence on the streets, only to be found gravely ill and taken repeatedly to local



stories of desperate courage to them by fate and poor luck.

emergency rooms. We learned upon his death that the name he had given us was an alias. Despite caring for him intensively for more than a decade, we never learned his true identity, and we still worry that his family may wonder what happened to their son, brother, or father. A kind funeral director arranged a wake for him, a Mass was said in the inner-city church where he often slept in the alcove, and he was buried in a paupers' field alongside thousands of others. A small bronze medallion with a number marks his grave; the name associated with the number resides in a city hall ledger.

BREATHING ROOM

One 45-year-old man in our cohort was apprehended for misdemeanors and held in the county jail for several months.

Curt, combative, and vituperative, he had nonetheless earned my respect through his fearlessness and noble insistence on being the protector of older folks on the streets. His approach to the world was explosive and confrontational, as he raged openly about the "lousy hand" he had been dealt in life. He belittled most of us in health care for "never listening" even though he frequently presented with a range of somatic complaints that resulted in exhaustive and futile evaluations. He wrote several letters from jail imploring our intercession and insisting that his complaints of severe back pain were being ignored.

When I visited, I found a pale, cachectic man unable to rise from his chair without severe pain. His complaints had indeed gone unheeded, even though a chest x-ray

HARD RAIN GONNA FALL: Annual estimates of the number of homeless in the United States approach 4 million. Single adults make up two-thirds of that number, and three-quarters of the adults are male.



The lack of both stable housing and health shortcoming in the continuum of care offered raises substantial ethical issues.

upon incarceration four months earlier had shown a suspicious lung mass and several collapsed vertebrae. After an immediate transfer to our hospital he requested that everything possible be done. His condition deteriorated rapidly, however, and we began a nightly vigil in his room. An armed guard was constantly at his door, and his leg shackles remained in place. He sat up through the night gasping for breath yet refusing oxygen.

On the day before his death, he pleaded for the dignity of dying without shackles on his legs. After many hours of calls and with the help of hospital lawyers, we found a judge willing to release him to our custody. Once the shackles were removed, his anger and will to live dissipated and he died within hours.

The lack of both stable housing and health insurance exposes a critical shortcoming in the continuum of care offered by our country's health care system and raises substantial ethical and pragmatic issues. To bridge this gap, in 1985 the Robert Wood Johnson Foundation funded health care for the homeless programs in Boston and Washington, DC, to develop and implement the concept of "respite care." Medical care and a safe place to heal were offered to homeless people with acute short-term illnesses, infections, and injuries who would otherwise require prolonged hospitalizations or risk considerable harm on the streets.

In the interim, seismic changes in our health care system have shifted the locus of care from hospital to home for many critical services. Drastic reductions in hospital lengths of stay, the astonishing evolution of anesthesia and minimally invasive day surgery, and the shift in specialty services from hospital to outpatient clinic for such treatments as chemotherapy have resulted in a dramatic increase not only in the demand for respite beds but also in the acuity and the complexity of the medical needs of people referred for respite care.

In 1993, BHCHP moved the original respite-care program of 25 beds nested

within a local shelter to the Barbara McInnis House, a free-standing former nursing home that now has 90 beds with 24-hour medical and nursing care. This program offers acute, subacute, preoperative, postoperative, recuperative, rehabilitative, palliative, and end-of-life care to homeless people throughout Massachusetts. Referrals come from emergency departments, hospital inpatient units, primary care and specialty clinics, and BHCHP staff in shelters and on the streets. The demand remains intense and overwhelming; the waiting list is cumbersome and discouraging.

McInnis House often becomes the venue for the deaths of many rough sleepers who are without families or insurance. As they provide care to dying homeless people, our nurses and doctors tread that fine line between caregiver and family member.

Several years ago we diagnosed an undocumented 42-year-old man from Central America with a leiomyosarcoma. A tireless worker at a local thoroughbred racetrack, he lived in a barn on the backstretch and sent half of his meager wages to his impoverished family. With no place to go and no health insurance other than the state's uncompensated care pool, he was admitted to McInnis House after his initial surgery and remained there while he underwent monthly chemotherapy that left him frail and fatigued.

The man's response to treatment was disappointingly brief and his medical and nursing care became intense as he weakened. We referred him to a skilled nursing facility for hospice care. This taciturn man tearfully pleaded to stay in the place he felt safe and accepted. We couldn't send him away. Nearly everyone on staff volunteered to take turns sitting with him at night to monitor his pain, help him to the commode, and ease his dread of being alone. Hospice nurses came to McInnis House to assist with his care and to educate us in end-of-life care. He died peacefully and with minimal pain two months later. The time and intensity of

these efforts were exhausting and created considerable tension within an already beleaguered staff. Yet we were all grateful for the opportunity. Perhaps most profoundly, his dying allayed the fears of our patients; they realized we would not abandon them at the time of death.

Each death has posed new challenges. A 50-year-old Vietnam veteran who spent 20 years living in the Boston Common developed head and neck cancer soon after celebrating a year of sobriety. His medical odyssey included a sequence of progressively more radical surgical procedures after he failed to respond to radiation therapy and chemotherapy. He eventually lost his tongue and most of his mandible. Time outside the hospital was spent in our respite-care program, where he stubbornly managed his own tracheostomy care while continuing to smoke in the courtyard.

A deepening depression, explosive outbursts over innocuous comments by other patients, and an escalating dependency on opiates for pain control became contentious and frightening, and he was eventually transferred to a nursing home for the last three months of his life. We would visit him regularly, enduring his wrath if we missed a day or failed to bring cigarettes. Unable to muster even a grimace of thanks with his disfigured face, he left a poem of hope and gratitude in his bedside drawer to be read at his funeral.

Rough sleepers have been exiled to the fringes of our cities, where the streets are desperate, lonely, and deadly. These prophets and visionaries gone astray illuminate the failures of many sectors of our society, including housing, health, education, welfare, labor, and corrections. Choices and options for these individuals have been limited by the ravages of poverty, illiteracy, mental illness, addictions, and chronic medical illnesses. These cries from the urban desert should rattle our foundations. ■

James J. O'Connell '82 is president of the Boston Health Care for the Homeless Program.

insurance exposes a critical
by our health care system and



HIDDEN DEPTHS:
Although many health
problems reported by
people who are home-
less mirror those in the
larger population, the
health concerns of the
homeless are often
compounded by mental
illness, substance
abuse, or both.

SWATERS

Uncharted

Doctors recount their struggles and fears as they recall





the dark days when Katrina hit home. by ANN MARIE MENTING

THE SCENE MIGHT HAVE APPEALED TO A FILMMAKER: SEVERAL HUNDRED officials closeted, focused on an event whose proportions stretched comprehension. Under discussion was a plan for dealing with Hurricane Pam, a slow-moving Category 3 hurricane that would batter the Gulf Coast with a 20-foot storm surge and breach the levees shielding New Orleans from the waters of the Gulf of Mexico. ☯ Pam, though, was conjured; a scenario constructed for practice and planning. A year later, the real thing hit town: Katrina. Her swift pace and backdoor breach of the levees swamped the plan and stymied the planners. ☯ Katrina came ashore the morning of August 29 and swept east, leaving a swath of inland destruction roughly the size of the United Kingdom. Her ferocity will likely remove her name



from the list for future tropical storms—but not from the memory of Gulf Coast residents. Katrina left five million of those residents without power. She left several times that number powerless.

The Katrina calamity has claimed more than 1,300 lives, added more than 3,240 names to the nation's list of missing, forced more than a million residents from their homes, and delivered a punch to the region's economic gut that has left the area gasping for nearly \$200 billion to aid in its recovery.

Among the witnesses to Katrina's destruction were Harvard Medical School alumni. Working at New Orleans's "Big Charity" throughout the disaster, Ruth Berggren '88 lived the fear, frustration, and fatigue that embraced the patients, staff, and medical professionals marooned first by the storm, then by Gulf waters. In Biloxi, Anthony Lamar Mitchell '98 faced the stress and uncertainty that came with working non-stop for long hours under daunting conditions and shifting circumstances. In Houston and Baton Rouge, Maurice Sholas '95 experienced the pain and isolation of the refugee—and the distress of doing all he could but less than he wanted.

Big Charity in the Big Easy

"Announce yourself," Ruth Berggren heard the nurse call out.

It was Thursday night, the tail of another tough day for Berggren, and she was trying to catch some sleep. A little before noon, efforts by the National Guard to evacuate patients through Charity Hospital's emergency room had stalled when a man, from a perch in a nearby parking garage, shot at staff, patients, and would-be rescuers. The group of prospective rescuers included Berggren's husband, Tyler Curiel, who had only recently canoed over from Tulane University Hospital, adding another doctor to Berggren's roster and bringing some welcome food to the ward's depleted stores. Yelling "Sniper, sniper!" the crowd in the loading area stampeded past Berggren, nearly knocking her down.

Twenty minutes later, another sniper, this time targeting the rear of the hospital, again stopped the evacuations, causing the National Guard to halt further attempts for the day—and to leave.

Now, one of the nurses on Charity's 9 West was sounding an alarm, alerting the HIV ward and Berggren—an infectious diseases specialist, an associate professor of medicine at Tulane University.



ty, and the ward's physician in charge—that there was an intruder.

Berggren jumped up, opened the door, and stopped in her tracks, riveted by the sight of an intense and sweaty Marine. He was on edge; someone was shouting at him and raking him with the beam from a flashlight. He was carrying a gun—and that gun was now pointed at Berggren.

"It was a very big gun," says Berggren. And it was the second loaded weapon she had come uncomfortably close to in under 24 hours.

Taking a deep breath, Berggren identified herself to the young soldier, eased her medical identification up for viewing, and explained that staff and patients still occupied Charity Hospital. Still occupied a facility that had no electricity; no working toilets or showers; no functioning ventilators, monitors, phones, or computers; and little food or water. A facility to which the authorities had sent this Marine to check for looters, a facility that he thought was evacuated of personnel and patients.

But about 200 patients were still in Charity Hospital, including 13 on Berggren's ward. And Charity still held the doctors, nurses, and other hospital staff who had protected and served those patients through nearly a week of record-setting hell.

"It was disheartening to learn that our message hadn't been received," says Berggren of the Marine's misinformation on Charity's status, "and startling to realize that the authorities didn't even realize we were there."

Berggren had been on duty when the hurricane hit over the weekend. Its high winds and driving rain had slammed the hospital, adding to the tension Berggren and her team felt as they worked to ensure all the patients were cared for and safe. By the time the storm moved

RIPPLE EFFECT: Far left, a satellite's eye view of Hurricane Katrina as the Category 4 powerhouse approaches the U.S. Gulf Coast on August 29, 2005; left, in Katrina's wake, floodwaters cover much of New Orleans, stalling the city and forcing residents to navigate their way to safety on foot.

THE HURRICANE HIT THE GULF COAST ON AUGUST 29, 2005. THE FLOODING IN NEW ORLEANS WAS CAUSED BY THE STORM'S WAKE. PHOTOGRAPH BY JEFFREY M. HARRIS FOR THE HARVARD ALUMNI BULLETIN.



SWEPT AWAY: Left, patients from Charity Hospital in New Orleans are evacuated by airboat; above, a bust of Jefferson Davis, the Confederate president, lies amid the remains of Beauvoir, his Biloxi home; right, a staircase marks the site of a home formerly on Biloxi's coastline.

out of the city late Monday, the hospital was nearing the end of its fuel supply for the back-up generators. But hopes were high that with the storm moving on, rested staff would soon be on their way.

Not so. On Tuesday morning, a look out the window told Berggren that reality had changed overnight. "I felt like I'd been slapped in the face," she says.

Charity was surrounded by water, and the water was rising. The basement swamped, rendering unusable the stockpiles of food and water stored there. The generators burned the last of the fuel, stemming the building's electrical life line and bringing quiet, darkness, and stifling heat. Doctors, nurses, and staff used flashlights to navigate the hallways and to check on patients, and they took turns manually respiring those on ventilators. Care was administered using vital signs and physical examination skills as guides.

Throughout their struggle to attend to the patients on 9 West, Berggren and her remaining staff passed up chances to evacuate. The need to fulfill their professional commitments kept them at Charity with their patients.

"It was important to voice that commitment," says Berggren, "to say aloud that we wouldn't leave until our patients left." That commitment held strong. Friday evening, after rescuers had finally moved the last patients from Charity, the doc-

tors, nurses, and staff from 9 West evacuated. They left Charity, but not its spirit.

"Katrina reminded us that when we abandon the poor, the ill, and the disenfranchised," Berggren says, "we sow the seeds of social chaos. We create a template for manmade disasters."

Big Charity has yet to reopen. Although it still stands, the massive steel and cement structure may ultimately succumb to Katrina. Charity Hospital depends on state funds for its operation and maintenance, but Louisiana, facing Katrina-related revenue losses of up to \$3 billion, may not be able to afford to repair it. And even if resources can be found to fix all that needs fixing, the building may not pass tests for structural integrity. Charity Hospital—which, before Katrina, was one of the country's oldest, continuously operating public hospitals—may cease to exist. If that happens, Berggren and others who practiced or trained there, as well as those who sought solace within its walls, will need to find a new place to sustain them.

Field and Stream

When he stepped outside to investigate a new site for emergency medical services in Biloxi, Anthony Lamar Mitchell had expected a soggy landscape, a scene of destruction and disarray.

He hadn't expected to see fish.

Although they had already moved twice in four days, Mitchell and his colleagues needed a new spot for Keesler Air Force Base's emergency department and critical care unit. The parking lot was the next candidate. This time the units would be sheltered by a tent rigged to serve the needs of nearly a thousand people, a group that included base personnel, family members of hospital staff, and Biloxi residents who had sought shelter in the hospital when Katrina hit their city.

But to set up the tent, it seemed they would first need to contend with the fish.

"Fish were all over the parking lot," says Mitchell, an Air Force Medical Corps officer and Keesler Medical Center's assistant medical director for emergency services. "Even the two large sinkholes that had formed in the parking area were full of fish, tossed up from the Gulf. I knew there had been a big storm surge, but I hadn't realized just how big until I saw those fish."

At 30 feet, the storm surge that hit Biloxi was the largest ever recorded for the area. Biloxi, spread as it is along a strip of land between the Gulf of Mexico and an inlet known as the Back Bay, had come close to submerging as Katrina drove water over it.

Katrina's storm surge filled the hospital's basement, knocking out power to



the building and flooding the emergency room and critical care unit on the ground floor. Emergency generators were pressed into service and Mitchell and his colleagues prepared to move to the second floor, all the while continuing to assist people coming into the emergency units, illuminating their patients—and their way—with flashlights. At one point, Mitchell and a fellow physician found themselves trying to determine how to treat a woman whose abdominal wound had split open.

“The wound appeared to be septic,” says Mitchell, “but by flashlight, it was difficult to assess. We couldn’t ask the woman questions; she was a French Acadian who spoke no English. We just had to wing it. Fortunately, we were able to give her antibiotics and intravenous fluids. She improved enough to be air-vacced out.”

The makeshift quarters on the second floor had to be abandoned two days later when power needs again became an

issue. This time, the group prepared to move to the Clinical Research Laboratory, a separate building roughly 150 yards from the hospital. That facility had a back-up generator that was still cranking. Within ten minutes in the new quarters, Mitchell was scrambling to help a man who had suffered a massive myocardial infarction. Mitchell was able to tap the laboratory’s electrocardiograph for some information on the patient’s status, but had to rely on basic treatment—aspirin, oxygen, and nitrates—to stabilize the patient.

“We were tired, dirty, and sweaty, and we were continually hauling patients somewhere—carrying them around on gurneys—just to get to quarters that would provide some power,” says Mitchell. “The complete loss of electricity and water took us by surprise. Most of us hadn’t envisioned practicing medicine without the usual bells and whistles. Or of needing to scrounge for usable supplies.”

The generator in the laboratory building failed after several days, so Mitchell and colleagues moved to the independently powered field hospital in the parking lot. Those quarters, too, proved to be temporary—Hurricane Rita moved in and the field hospital folded, pushing Mitchell and company back to the somewhat refurbished laboratory building.

The sense of just how rapidly situations can worsen has stayed with Mitchell, not only because of his experience of packing and unpacking an emergency department several times in only a few days, but also because of what he observed among the population he served during the storm.

“During Katrina, we were seeing about 20 people a day under horrendous conditions,” he says. “Even though base personnel are a group of relatively healthy military individuals, every day someone else would be added to our patient list. Everyone, it seemed, was just a day away from being sick or injured. Katrina showed us



how important it is to be ready for such a demand for medical care.”

Mitchell and his colleagues have since moved back to the hospital, to a tiled portion of the first floor facility that could easily be scrubbed clean. The emergency room, however, is operating only at the level of a first-aid station, providing x-ray and basic laboratory services. The hospital as a whole needs to be rebuilt; currently it has no inpatient facilities. Plans are to have some inpatient beds and a functioning inpatient care unit—and to coax the emergency room back to life—by the spring of 2006.

But Mitchell can't think too much about Keesler's facilities these days. He's packing once again, responding to a different maelstrom. This time, he's moving to Iraq.

Unhoused in Houston

After several days of being cooped up in a friend's home in Houston, of limiting

his viewing of updates on New Orleans to 20-minute, stress-filled glimpses, Maurice Sholas could no longer tolerate inaction. He got in his car—the very car that had allowed him to escape New Orleans—and headed for Houston's Astrodome. His plan: to volunteer medical services to New Orleanians who, like him, were finding refuge from the chaos back home.

When Sholas arrived at the vast domed structure, he entered the new “home” of thousands of uprooted people. People who had been without so much for so long—out of food, water, and facilities to clean or relieve themselves, out of contact with friends and relatives. People who had waded through the “HazMat gumbo” of the New Orleans flood to get to the Superdome, to evacuation buses, and, finally, to Houston. The people and the conditions at the Astrodome formed a yeasty mix warmed by the humidity generated by exhalations from more than 13,000 people. And that mix had a smell.

“It was a peculiar stench,” says Sholas. “I can still recall it.”

Sholas headed for the medical facility for evacuees in the Reliant Astrodome complex, an operation housed in a field hospital set up in the nearby Reliant Arena. Fortunately, Sholas—an assistant professor and the director of pediatric rehabilitation at Louisiana State University's Health Sciences Center and its affiliate, New Orleans Children's Hospital—had evacuated with documents verifying his status as an attending physician in Louisiana. He was allowed to join the ranks of medical workers.

During his two weeks as a volunteer, Sholas's assignments ranged from transporting patients to examining babies. He remembers one set of twins particularly well. The mother had spent day after sleepless day ferrying the pair through the New Orleans flood, and protecting and caring for them in the chaos of the Superdome. She had struggled to wedge herself and her tiny

charges into space on a bus to Houston and, when she arrived at the Astrodome, had claimed one cot among the thousands placed inches apart on the floor of the facility. She had finally made it to the front of the line of patients and had presented the four month-old infants to Sholas. He checked them carefully.

"When I turned to the mother and told her the twins were healthy," says Sholas, "she just broke down in tears."

Shortly before the last of the evacuees were moved to facilities in Arkansas, a precaution spurred by the threat of Hurricane Rita, Sholas headed back to Louisiana, this time to a couch in his uncle's home in Baton Rouge—and work at a satellite clinic run by New Orleans Children's Hospital. For nearly seven weeks, Sholas pitched in to handle the influx of pediatric patients from New Orleans; many of the children had been sundered from parents or guardians.

Baton Rouge now had the boomtown atmosphere that comes when a city's population doubles in about 24 hours, pushed up by scores of people who had

headed there from New Orleans. Demand for care was intense; delivery of care was difficult. So much was missing or unavailable: medical records, medications, office space from which to contact patients, and exam rooms in which to assess their conditions.

Time was also in short supply for Sholas, who had no leisure to sit and think or begin to sort out what things should be done to inch toward equilibrium. For longer than he cared to remember, Sholas had not received mail and had been unable to access his email. He also had been unable to get in touch with friends, colleagues, and many patients he cared for regularly.

"Like so many others, I have been without my support system," he says. "I think that's something that has made this disaster even greater than it appeared to be. After 9/11, people in New York could get to friends and neighbors, could reach those they cared about by telephone only a day or so after the disaster. We can't do that, and probably won't be able to do that for a long time."

Although his office remains unusable, Sholas has been back at Children's Hospital since it reopened. Of the dozen or so major hospitals in the New Orleans area, two have begun operating to a limited degree and five, including Children's, are considered fully operational.

Fully operational may be a matter of definition rather than reality. According to Sholas, the doctors at Children's are caring for those patients whose families have found their way back to New Orleans. The hospital, though, is operating without significant numbers of its other talented workers—many office staff and Louisiana State University administrators have been furloughed, and about half of the hospital's nurses, support staff, and maintenance and food service staff—many of whom lived in the devastated parts of the city—have not returned. Physically, however, Children's fared comparatively well in the storm; it stands on higher ground. ■

Ann Marie Menting is associate editor of the Harvard Medical Alumni Bulletin.



HOME AND HEART: Left, a sign on the site of a destroyed Biloxi home signals a new start for its owners and a post-Katrina housing push in the region; above, cots fill as evacuees from the Superdome in New Orleans find space in Houston's Astrodome; right, a young mother feeds her six-week-old son in the Reliant Center in Houston—a quiet moment after days spent shepherding her three children out of their flooded New Orleans neighborhood.





freeze

SEVERAL RISKS TO PEDIATRIC HEALTH ARE LITERALLY STARING CHILDREN IN THE FACE. IT'S TIME TO CALL THE DOCTOR. by Janice O'Leary

*The most important thing we've learned,
So far as children are concerned,
Is never, never, never let
Them near your television set...
They sit and stare and stare and sit
Until they're hypnotized by it...
Did you ever wonder exactly what
This does to your beloved tot?
His brain becomes as soft as cheese
His powers of thinking rust and freeze
He cannot think—he only sees!*

—THE OOMPA-LOOMPAS IN *CHARLIE AND THE CHOCOLATE FACTORY*

THE OOMPA-LOOMPAS' CAUTIONARY SONG about the hypnotic effects of television on children may have seemed alarmist in 1964 when *Charlie and the Chocolate Factory* was first published, but now its lyrics seem almost understated. In Roald Dahl's story, television addict Mike Teavee pays for his obsession by getting shrunk to the size of an actor on a television screen. Dahl exaggerates the effects of excessive viewing, but for children glued to media screens today, the consequences may be more insidious and just as hazardous.

Decades of research have established that television and other screen media—movies, the Internet, and video games—constitute a powerful environmental influence on children's health and development, according to the Center on Media and Child Health at Children's Hospital Boston. American children aged 8 to 18 spend an average of 6 hours and 21 minutes daily using media—more time than they spend in school or with their parents. And the risks of so much time spent in thrall to their screens are serious.

PHOTO: CHRISTOPHER HARTING

frame



Media may play a role in fostering bullying

More than 2,200 studies have linked media use and aggressive behavior. By age 18, a child will, on average, have witnessed 200,000 acts of violence, including 18,000 murders. Children's programs—shows that one would expect to be free of violence—average 14 violent acts per hour, 8 more than adult programs. For adolescents, the influence of violence in media may even prove fatal: the top three causes of death among 15- to 19-year-olds all involve accidental or intended violence.

Media use is also a risk factor in obesity, eating and sleep disorders, and early initiation to smoking, sex, and alcohol. New research, much of it conducted in affiliation with HMS, shows how media can inhibit creativity and cognitive development and suggests that media may play a role in fostering bullying as well as anxiety and attention disorders.

As often as the science is cited, it is ignored. Many parents, too harried to sift through research databases, might continue to overlook the evidence unless a trusted authority—their child's pediatrician—emphasizes the dangers of inappropriate media content and use. Parents may feel powerless in the face of the sheer pervasiveness of television and computers, but physicians are finding new paradigms for making media control less remote.

Media Frenzy

Like the Oompa-Loompas, Michael Rich '91 understands the powerful clutch media can have on the mind, especially the mind of a child. So well has research documented the connection between watching violence on television and aggressive behavior, he says, that the correlation is "stronger than those linking calcium with bone density and passive smoke with lung cancer."

Rich, a pediatrician and former filmmaker who worked for two years with the famed Japanese director Akira Kuro-

sawa, directs the Center on Media and Child Health. Much of Rich's research has focused on the dangers stemming from the violence depicted on television and, more recently, the violence that permeates video games.

One 2004 study by another group compared the physiological responses of adults playing four different video games, two with storylines and two without. The researchers found that story-based video games led to significantly more character and game identification and increased physiological arousal. Other studies have documented how such physiological responses can lead to aggression. "If you watch a violent show and a half hour later go to a store where someone cuts you in line, you're more likely to respond aggressively," Rich says. "Over time, small incidents accumulate and form patterns of violent behavior. What matters is that you learn from what you experience."

And by learning, he means the hard-wired kind. "Brain mapping indicates that media violence is processed along primitive survival pathways and stored in long-term memory," he says. In other words, we embed media violence deeply in our brains. In work with functional magnetic resonance imaging, or fMRI, Rich's team has discovered that "the brain regions activated when viewing violence onscreen are the same ones that light up when those suffering from post-traumatic stress disorder relive their traumas."

Alvin Poussaint, founder of the Media Center at the Judge Baker Children's Center and an HMS professor of psychiatry, says that the way children learn from television can cause another form of lasting harm. "If children watch 'edutainment'—shows that teach through song and dance—they begin to associate learning with an entertainment format and expect that format when they go to school," he says. "But teachers aren't going to sing and dance for them. So then children complain that school is boring.

Compared to the fast-paced, exciting shows they're used to on television, it is boring. Nothing will meet that standard. Television constantly ups the ante."

Some of the newest research suggests that television and the multimedia world in which children simultaneously watch MTV, listen to iPods, and chat on the Internet may be contributing to the increase in diagnoses of attention disorders. Rich believes that fMRI studies on attention, which are only now just getting started, will help establish whether a connection exists.

Certainly, researchers have found a correlation between media use and reading. "Kids who watch the most television don't do as well in school," says Poussaint. "Television is not the best way to learn; it's too passive and noninteractive." A 2003 study found that toddlers and older children with screen media in their bedrooms learned to read later and read less than those with no screen media in their rooms. The Oompa-Loompas begin to seem like prophets.

Poussaint adds that 26 percent of American children age two and under have televisions in their rooms. That's a quarter of the pediatric population whose reading might be delayed and whose parents cannot monitor their viewing habits. "Kids can operate the remote control by age two," Poussaint points out, "which is especially dangerous with cable channels."

Preliminary research shows a link between hours of television viewed and bullying behavior. But these studies have looked at only the quantity of hours watched, rather than the substance of those hours. Rich, in his next project, plans to examine how program content influences bullying and anxiety in young viewers.

Mixed Media Reviewers

The notion that media have no upside has hampered advocacy efforts, Rich

as well as anxiety and attention disorders.

says. "Media are not inherently toxic," he says, "and adversarial positions between research and industry are bound to lead to stalemate. We can't take a Luddite approach; we can't escape media. We must learn to live with these powerful forces in our lives in ways that are healthy and safe."

Rich likes to mull all sides of the pixelated Rubik's Cube of media's effects on health. "Who knows," he says, "what we call inattention today might indeed be necessary in the future when demands may differ. Maybe we're teach-

ing a different kind of attention, a more superficial one that allows a greater focus on what's interesting. Maybe it's more adaptive; maybe not."

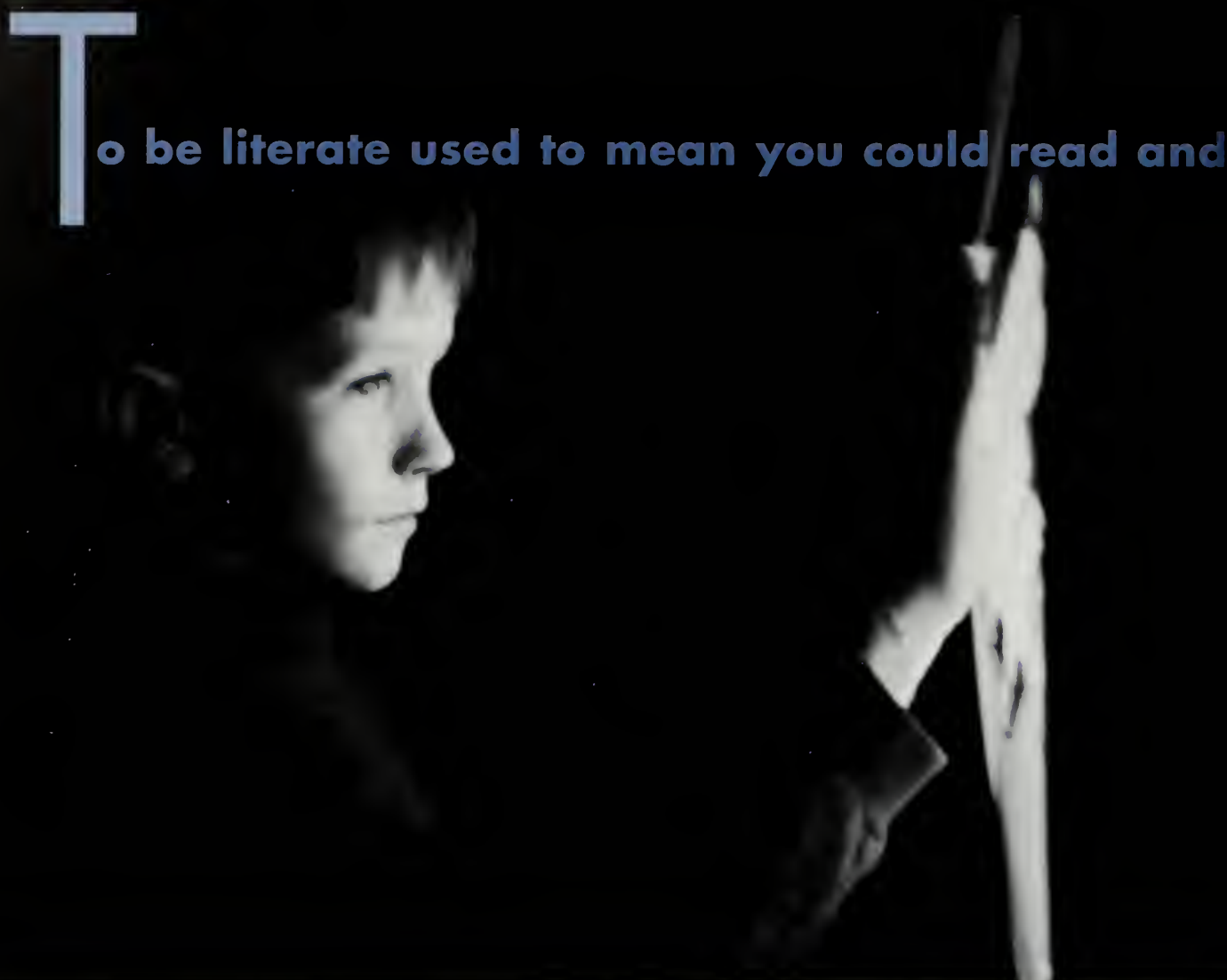
Like Rich, pediatrician and researcher Victor Strasburger '75 believes that media—because of their power—can aid in child development. "Hollywood should realize that regardless of intent," he says, "its products have a public health component. Filmmakers could use their medium to make kids healthier without losing box office sales." While children imitate the violence on television or in the movies,

especially that perpetrated by heroes, they also imitate the good behavior they witness and positive role models such as Mr. Rogers. Strasburger advocates more of such prosocial programming.

John Livingstone '58, a pediatric psychiatrist at McLean Hospital, an HMS assistant professor, and a consultant to the television industry, is campaigning for PBS to embed emotional literacy in its new programming and for the cable industry to embrace health-risk standards. "Television shows can model positive ways for handling feelings," he says.

DUMBING DOWN:
On a tour of Willy Wonka's chocolate factory, Mike Teavee is so enthralled with television that he ends up shrinking to the size of an actor on the television screen.





To be literate used to mean you could read and

"Social learning research shows that when children watch likable characters struggling with decision-making, they can learn better impulse control, especially when they see the realistic results of the choices the characters made."

The power of prosocial programming can be so strong, Livingstone adds, that even violent content—when portrayed realistically and in the context of outcomes—can be beneficial. "If it's handled well," he says, "violence with consequences can promote socially responsible behavior. Let's say a show features a gang of kids on a street. In one scenario, a gang member remarks that a passing kid looks like a wimp and says, 'Let's punch him out.' The group beats him up."

"In a better scenario," Livingstone says, "the gang member remarks that a passing

kid looks like a wimp and says, 'Let's punch him out.' But this time a likable gang member speaks up against the plan, then another and another. Half the group takes off in protest. The other half beats the boy up and later faces legal and parental repercussions. The program could retain its dramatic tension while modeling a socially acceptable option in the teenager's world."

Poussaint helped create prosocial content when he worked as a consultant to "The Cosby Show" for eight years. "I would review scripts to eliminate any stereotypes or put-down humor," he says. "Cosby wanted the program to be a positive model for families. We'd bring up real family issues and make them as believable as possible. I also critiqued what people would

eat on the show. If the script called for fried pork chops, I'd change it to grilled chicken." Even a small change had the potential to cause powerful ripples—the show reached 60 million viewers.

Don't Touch That Dial

Prosocial programming is one solution to dealing with the potential dangers of media; media literacy is another, and one that puts power in physicians' and parents' hands. For Rich, media literacy has two components. First parents and physicians need to be educated about the science. To this end, Rich has developed a website that offers a searchable database of all the multidisciplinary research on the health effects of using media. So far his team has collected citations for

PHOTO: JASON H. BROWN / ZETA CORBIT

write. Now you must decipher a variety of media."

nearly 8,000 studies, already one-eighth of which browsers can search online.

"I want to get the science out there," Rich says. "An interdisciplinary approach will test and enrich each field and any future research." He hopes his fellow pediatricians especially will become regular users of the site and, once they know the research, will pass on what they've learned to their patients' parents.

The second component to media literacy is teaching children to become media savvy. Currently, Rich's team at Children's Hospital is studying the effects of teaching media literacy to elementary school children. Building on previous research that discovered that six-month media literacy programs for fourth graders resulted in weight loss among the children and a 25 percent reduction in schoolyard violence, they are evaluating whether media-savvy children are better able to protect themselves against obesity, substance use, and violent behavior.

In another study, published in 2003 by a Stanford researcher, third- and fourth-graders participated in a media literacy program. After one week of "television turnoff," they were encouraged to follow a seven-hour-per-week budget. Additional lessons taught "intelligent viewing." By the end of six months, combined average television and video game usage plummeted from an initial 18 hours per week to 10, and the children experienced an average body mass index decrease of nearly half a point.

Strasburger, who researches media's effects on children and adolescents at the University of New Mexico, also wants to promote media literacy, but finds it difficult to convince physicians, parents, and teachers that the issue should take priority. "When I consulted with the National Parent Teacher Association," he says, "its leaders had a hundred concerns on their list, and media literacy was nowhere

near the top. They wanted to talk about obesity, eating disorders, and bullying, but didn't realize that media affect all those problems. Many parents and teachers believe media have a minor influence. That might have been true when they were growing up, but it sure isn't the case now."

Poussaint adds that parents should play an important role. "Parents need to watch television with their children and explain what's make-believe," he says. "Commercials are especially insidious, because children don't begin to understand the persuasive intent of ads until about age eight. Commercials also pit children against parents. Television tells children a particular candy bar will make them happy and, when parents refuse to allow it, the children see their parents as denying them this happiness."

Strasburger says some of this work can be done in school. "We need to teach kids skepticism about advertising and television programming," he says. "They should understand, for example, why a commercial or show airs when it does. We already have a system in place for teaching media literacy: sex and drug education programs in schools. Both could incorporate media literacy, and teachers could take the lead."

Strasburger knows how difficult a demand that is. "Administrators are already overwhelmed by state mandates for teaching," he says. "But the nature of literacy has changed in the past century. To be literate used to mean you could read and write. Now you must decipher a variety of media. Our schools haven't caught up to the digital age."

Scars of the Silver Screen

The entertainment industry and Congress both point to the ratings system as a protective mechanism for child viewers. "But studies have shown that

ratings are often deceptive," says Strasburger. "Parents don't understand ratings, and kids want to see whatever the next level above them is."

And what children perceive as only one level up is often more like two. In 2000 the Federal Trade Commission found that 80 percent of movies rated R and 70 percent of video games rated M—or mature—for violent content were marketed to children under 17.

To add to parental confusion, movies, television shows, and video games all have distinct ratings systems, based on guidelines created by industry executives. Rich, Livingstone, and Poussaint have testified before Congress to plead for a unified, science-based ratings system. "Few people understand what the ratings mean," Rich says. "The current system is worse than an imperfect science. Imperfect, yes. Science, no. Every network and movie company has different standards, and they're not aimed at what's best for children. They're aimed at what parents will let their children see, which, in changing times, is always a moving target."

Livingstone says that the media executives who created the television ratings in 1996 never developed uniform, evidence-based standards; instead, they relied on their own values. He would prefer to eliminate ratings and potential First Amendment conflicts about freedom of speech by allowing nonprofit organizations to select menus of low-risk programs and to provide those menus on screen for parents, coupled with the electronic means to convert their televisions to air only those shows in their absence.

The V-chip was intended to provide this kind of high-tech protection, yet Poussaint believes it failed miserably. As an advocate for protecting children, his center was active in getting the V-chip approved at the federal level. "We fought



Media cut across every public health concern

hard for it," he says, "but people don't use it. Many parents don't even know that since January 2000 all new television sets larger than 13 inches have a V-chip they can use to block certain channels."

Poussaint speculates that the V-chip may be a failure not just because of ignorance, but also because of a skewed ratings system. MTV, which is rated TV-14, demonstrates the problem. "Many parents let TV-14 shows through the filter, but channels like MTV are not always healthy for teens to watch," he says. "Rap videos especially are often misogynistic, encouraging men to mistreat women. Just when social development begins, social relations become problematic."

One of the necessary conditions for the industry to accept any health-based system, Livingstone says, is that physicians must know and support the scientific standards. "First the medical community needs to be clear that personal, value-based reactions to media content differ from evidence-based risk factors," he says, "or the industry will continue to divide and spin us. Industry believes any standards constrain, but health standards actually liberate because they consider context and are unbiased. The market is there for low-risk and health-promoting programs. PBS and cable could lead the way."

Livingstone emphasizes that asking the industry, excluding the nonprofit sector, to behave responsibly leads nowhere. And he knows from experience. After the V-chip was implemented he consulted at MTV, advising executives to weave scientific standards into programming.

"When I suggested changes for health reasons," he says, "the executives told me they had to keep profits intact. They used my input when it happened to dovetail with their legal mandates—eliminating gratuitous sexual images and dangerous imitative behavior, such as suicide and drug use—and their personal values."

"Asking networks to behave responsibly is the wrong paradigm," Livingstone says, "because they must hew to the bottom line. The entertainment industry will embrace health if it has other reasons for doing so besides altruistic ones. If there are dollars on the other side of it, industry executives will want to do it. They don't need to assess shows. They just need to enable parents to make informed, health-based, and personal value choices at home. If parents can choose healthy, safe programs for their children, they will filter out the other shows. That will drive the change in programming. Creative professionals will want to make more shows that can pass through the filter."

"We're up against an industry where money usually comes first," Poussaint adds. "The impact on children is often secondary." If it's considered at all.

The Golden Ticket

Studies have suggested that 10 to 30 percent of violence in society can be chalked up to the impact of media violence, says Strasburger. "That's a nice big chunk we can do something about." And by "we," he means doctors.

Until improved high tech approaches go live, physicians can help children develop healthy media habits through a low-tech approach: conversation. "Physicians aren't saying enough to parents," Rich says. "We need to educate doctors to educate parents that media matter." He adds that many parents don't know that the American Academy of Pediatrics has established guidelines that recommend no televisions, video games, or Internet access in children's bedrooms; no screen media for children under two; and no more than two hours of educational television a day for children older than two.

If most parents don't know the recommendations, they certainly don't know

the reasoning behind them. "In the first 18 to 24 months of life, the brain is developing rapidly, primarily in response to environmental stimuli," Strasburger says. "Stimuli that optimize the development of brain architecture include personal interactions, motor skills practice, and problem-solving activities. And the best way to teach these skills is not through screen media."

"Physicians need to encourage parents to interact with kids while watching television," Poussaint says. "Parents come home from work and turn on the news without thinking. Kids see images of the war in Iraq without anyone addressing their fears."

"What disturbs me most is that my fellow pediatricians don't seem to get it," Strasburger says. "Media cut across every public health concern that they have for their patients: obesity, eating disorders, attention disorders, violence, sex, and drug use. Yet while they worry about obesity, pediatricians don't realize the significance of media. The reality is that media play a huge role in determining if a child will become overweight; obesity has been linked conclusively with television ads and time spent in front of a screen." Strasburger discovered that his own heavier patients watch three to five hours of television a day. When they take him up on his suggestion to adopt a dog and walk it one hour each day, they lose significant weight.

But change can happen only when doctors perceive content and misuse of media as a root health problem, Strasburger says. "I have several theories about why pediatricians put media at the bottom of their lists," he says. "They may not watch much television themselves. They may know television from a kinder, gentler era. Or possibly they may be so focused on helmet use, immunizations, and developmental milestones they can't squeeze another

that pediatricians have for their patients."



discussion into an examination. Of course, they may just be tired of being browbeaten by academics like me."

Parents, who themselves are likely desensitized to violence through media, may also feel browbeaten—by the challenges of careers, caretaking, and commuting. But counsel from a trusted source—a pediatrician—could make a big difference, Strasburger says. "Giving such advice can take less than a minute. Ask just two questions: How much screen time does your child have per day? And, is there a television set in your child's bedroom?"

Livingstone urges primary care physicians to become conversant enough with the risk factors of media content to feel confident speaking to parents about those risks. One way they might do this, Rich suggests, is through resources developed at his center, in addition to the searchable online database. "Physicians can come to us," he says. "We're developing a series of diagnostic guidelines and therapeutic interventions that physicians can use in the office to evaluate whether their patients are suffering from an overexposure to media."

Livingstone agrees that pediatricians should broaden the definition of pediatric health care by taking a "media history." "By asking a few questions," he says, "pediatricians communicate their belief in the child's mind and in our power to help develop that mind."

And those few questions just might make the difference between a child having a brain that, as the Oompa Loompas warn, becomes soft as cheese, or one that develops healthy and sharp. ■

Janice O'Leary is assistant editor of the Harvard Medical Alumni Bulletin.

Visit www.cmch.tv/research/searchcitations.asp to access the research database of the Center on Media and Child Health.

A FEW GOOD WOMEN: Martha Bears Rich (bottom row, second from right) was one of only 26 of the original 90 class members to complete an arduous nursing program.



WHITE

by MARTHA BEARS RICH

I COULD STILL SMELL THE BURNED FLESH, decades after the Cocoanut Grove fire. It was a day when I accompanied a group of high school students on a field trip to Massachusetts General Hospital. Although I knew nothing stronger than the scent of cleaning products was lingering in the air, the moment I entered the old corridor, I felt overwhelmed. The mere sight of the brick walls brought back memories of the awful stench that had permeated the hallway, where corpses were laid out so thickly there was barely room to walk.

Training at Harvard hospitals during World War II gave one student nurse a crash course in the fast-paced realities of clinical care.



PHOTO COURTESY OF MARTHA BEARS RICH (far left) COURTESY OF TIMMONS COLLEGE

CAP



IN THE LINE OF FIRE: Within several moments, the hundreds of revelers jammed into the Cocoanut Grove were thrown into a panic as a roaring mass of flame swept through the club with explosive speed.

On November 28, 1942, the date of the fire, I wasn't much older than a high school student myself. That next morning the director of nursing at Simmons College told our class of student nurses that Massachusetts General Hospital was asking everyone with experience on the wards to help with the Cocoanut Grove victims, casualties of a fire that would claim nearly 500 lives.

I visited the Cocoanut Grove only once when it was in business. Ironically, I still have a matchbook from the famous Boston nightclub. When news of the fire broke, I recalled the club's dance floor, which had room only for a few couples, and its garish, artificial palm trees—later identified as possible accelerants to the fast-moving blaze.

I had already heard about the disaster on the radio but had little idea of what to expect when I arrived at the hospital. Although the severe shortage of medical personnel caused by the demands of World War II would eventually allow me to gain a great deal of firsthand experience, as of that night I had been “capped”—ceremonially initiated into the nursing profession—for only a few months. I hadn't had much opportunity to work in mass trauma situations, although I had certainly heard many stories. My favorite aunt, who inspired me to enter the

nursing profession, took care of military casualties during World War I. She told me how the wounded were crowded so closely together that she had to step on the rungs of their cots to get from one side of the ward to the other.

I couldn't have predicted that, like my aunt, I, too, would see my nursing career coincide with a world war. But for me, the war felt distant, even though my fiancé, brother, and cousins were all on the frontlines. The Cocoanut Grove tragedy, by contrast, I experienced acutely. Even though I wasn't assigned to the emergency room, I witnessed the agony. The football teams of Boston College and Holy Cross had engaged in their intense traditional rivalry that afternoon, drawing a huge, youthful crowd into town and into the club that night, and many of the victims were my age.

By the time I arrived at the hospital, workers had already cleared an entire floor of inpatients, adhering to emergency procedures that were in place because of the war, to make way for the injured. The first task was to sort the living from the dead. Stepping gingerly around the bodies, doctors and triage nurses looked for signs of life.

The corpses were carried to the brick corridor, which served as a morgue for the first couple of days after the disaster. I traversed that corridor each

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morning, and never could get away from the stench of charred flesh and hair and fabric. Even our uniforms seemed to reek of it.

Out of the Ashes

I continued to work at the General for a few days following the fire and returned a month later for my scheduled year of clinical experience. By then some of the fire victims had been transferred to the regular wards. To treat these patients we slathered their burns with boric acid ointment and applied sterile gauze bandages and pressure bandages over the gauze. The treatment seemed revolutionary at the time. Physicians would apply lessons learned from the Coconut Grove experience to their care of soldiers burned in the battles of the ongoing war. But years later, it became clear that many people with major burns had absorbed a great deal of boric acid and were experiencing a range of health problems, so that approach was abandoned.

One of the patients on the wards where I worked was Dotty Myles, a teenage vocalist with Mickey Alpert's band, which had been playing the club on the night of the fire. Badly burned on her face and hands, she had been left for dead on the sidewalk. But she somehow managed to drag herself to an ambulance already crowded with victims. She was the only one of them still alive by the time the ambulance reached its destination.

Enduring months of skin grafts, Dotty used the rings on her bed curtains as rosary beads. When the burns on her face healed to the point where it was safe to cover them, she would apply makeup to mask her scars, don a pretty bed jacket, and tie her hair back with ribbon, a ritual made private by the curtains she would ask the nurses to pull around her bed. When she had recovered enough to walk around, she'd visit the other burn patients, singing softly to entertain them and raise their morale.

Life in the Ward Zone

My nurse's training was a serious business with few allowances made for youthful impetuosity.

After beginning the program at Simmons College in September 1940, I trained at several Harvard hospitals. The United States had entered World War II during my sophomore year, and the war was still on when I graduated.

The mentality of a nation at war was reflected in the boot-camp-like atmosphere we endured as nurses in training. We had a strong sense of being on the home front, although we rarely saw servicemen because they received treatment at military hospitals. We worked 12-hour days in the hospitals, with no breaks. When we got off duty at seven in the evening, we attended classes for another few hours. We fell into bed exhausted, but then had to be back on the wards early the next morning. If someone failed to relieve us we couldn't go off duty—and often no one relieved us.

With the war on, many experienced nurses were in the service, so our training turned out to be intensive. There were many times when I was the only nurse for a 40-bed ward. Those of us who made it through our training emerged with the skills and confidence that came from being thrown into clinical experiences for two solid years, day and night. The discipline we gained also helped us deal with the many privations of the war era.

Chief among those privations was food. We were required to turn our ration books in to the hospital, so our stamps could be pooled for everyone. The food shortage meant that the hospital fare was just dreadful. Every Sunday the General served a dish listed as "creamed chicken." One chicken, it seemed, was used to feed the entire hospital, both staff and patients. We never glimpsed the actual chicken; we just received a sort of greasy gravy slathered on toast.

If we were lucky enough to get a 15-minute break while on night duty, we could descend to the cafeteria for "tea," which meant tea or coffee with slices of cold, dry toast spread with uncolored margarine, which looked and tasted like lard. That's all we ever had to eat at night; we never received a proper meal.

One of my patients at the General was a fruit vendor from the North End. When a visiting relative

The strict expectations were also reflected in the fastidious attention our superiors paid to our appearances.

brought some bananas, my patient gave me one. It was just a regular, ripe banana, but bananas were like gold. I took it back to my dorm room and shared it with all my off-duty classmates: seven of us clustered around one banana, savoring each morsel.

I suspect our inadequate rations contributed to our feeling so dog-tired all the time. My fiancé's father, a dentist, once took a look at my teeth and exclaimed, "Someone's been starving you!" My molars were decaying for no reason other than malnutrition.

In January 1944 we went from the General to Children's Hospital. During our first weekend there they served us each a quarter of a chicken. I remember sitting at the cafeteria table with my friends, each of us just staring at the plate before us. It was like heaven; we hadn't received that much food at one meal in a year. Children's Hospital provided us with nutritious meals and it showed, because although we were tired, we weren't as exhausted as we had been.

Spit and Polish

The tough regimen extended beyond dietary restrictions. Ours was a military-style discipline; we did what we were told. If we erred we heard about it immediately, as we learned not long after arriving at the Peter Bent Brigham Hospital for our first few months of clinical work. The utility room had a "copper hopper," a long tube into which we emptied bedpans. No one ever clarified its purpose; students were expected somehow to know already what it was. That same utility room had a laundry chute. So, for several days, one of my classmates unwittingly emptied bedpans down the laundry chute. When her error was discovered, she was severely chastised. But no one had explained the difference to her.

The strict expectations were also reflected in the fastidious attention our superiors paid to our appearances. We were told exactly what to wear and how to wear it, and our clothing was inspected frequently. If our shoes weren't clean, we were reprimanded.

Every school had a distinctive uniform, which differed for students and graduates. Our student uniform was a below-the-knee, white-collared blue dress worn underneath a white apron. Our graduate

white uniform had 30 tiny buttons that ran down one side and across the waist; yet more buttons ran down the long, pleated sleeves. Pushing the buttons through all those tiny openings took forever, so we quickly learned how many we could leave buttoned and still manage to slip on the uniform. We also wore a plain white cap with a split in the front.

We didn't complain much about these inconveniences, though, because we thought the Simmons uniform was the best one. We laughed at some of the others, which we thought looked hideous, particularly the student uniform for the General's nursing school: a long black-and-white check dress with a white apron and a cap shaped like a coffin with a frill around it. We tried to bend the rules by pinning our caps in a way that flattered our faces. But if we wore them too far back, too far to one side, or not folded just right, our supervisor would bark, "Fix that cap!"

School Ties

Spit and polish sometimes went too far. One night at the General, I was assigned to the operating room, where we were about to do some vein ligations. But a terrible train accident occurred at the North Station yard, and a slew of ambulances brought in a large number of patients, some with their legs half-severed. I didn't get off duty until nearly nine in the morning, having gone on duty at a quarter to eleven the night before. I stumbled into bed and had just fallen asleep when the housemother of the nurses' dormitory started pounding on the door. "Wake up, put your uniform on, and get back on the floor, immediately!" When I asked why, she snapped, "Don't ask. Just go!" So I dressed and returned upstairs, where the operating room supervisor chewed me out because I hadn't dusted one piece of equipment.

I explained that nearly 30 serious injuries had been admitted during the night but she would have none of it. I was supposed to dust, and she didn't care if I had to stay there until noon. I should have taken care of it before I left.

I was furious. When she finally let me go, I marched downstairs and took the streetcar up to



Simmons. The head there was Helen Wood, a prim maiden lady in her sixties. Her hair was always perfectly coifed and she wore neat dresses with a brooch at the throat. She was extremely strict but kind, too. I now stomped into Miss Wood's office and announced, "I'm quitting!" When I explained my reason, she drew herself up, put on her coat, stabbed a few hatpins into her hat, and strode out with me, muttering as we left, "They wouldn't have done this to one of their own students!"

I never found out what Miss Wood said to the OR supervisor, but she never treated me that way again. Miss Wood was strict, but she always backed us up.

Division of Labor

Yet there were certain ironclad rules of authority we dared not break. If a doctor entered a room, for example, we stood up and remained standing until he left. We never spoke to the doctors, we were never allowed to ask questions, and we never, ever sat with them in the cafeteria. I remember eating my cold toast alone on night duty once when a young intern joined me at the table. When I nervously told him I couldn't sit with him, he replied, "That's ridiculous. I just want to talk to somebody." A supervisor strode over and reprimanded me: "What do you mean by sitting here with one of the doctors? Get back up to your ward!"

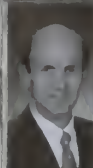
Student nurses on rounds could do no more than follow and listen. Sometimes if the doctor was interested in the case, we would learn. But others would simply pat the patient on the shoulder, say, "Oh hello, Mrs. Brown, how are you today?" and leave, and that would be it. In those instances, we wouldn't learn anything—and neither would the patient.

The medical students would occasionally pipe up, but they were almost as beaten down as we were in those days. They worked long, punishing hours. And the interns weren't much better off. They worked day and night, straight through, grabbing an hour of sleep here and there when they could. Patients probably died because the doctors were delirious with fatigue.

Fortunately, times have changed, and the young women and men training as nurses at the various Harvard hospitals are no longer subject to what now seems to have been a draconian workplace culture. Those of us who lived through that era, though, will never forget its lessons. We were extremely well prepared for whatever branch of nursing became our life's work. ■

Martha Bears Rich served as a school nurse at Sharon High School for 21 years before retiring in 1986. She was a founder and the first president of the Massachusetts School Nurse Organization.

TRAINING DAZE:
Nursing students would work 12-hour shifts without a break—and then spend hours in the classroom.



Stepping Up to the Plate

ORTHOPEDIC SURGEON THOMAS J. Gill IV '90 admits that as a boy he didn't always appreciate the privilege of going on grand rounds with his physician father on Saturdays. "Meeting visiting Nobel Prize winners didn't faze me," he says. "I went only for the cheeseburger and fries Dad promised."

But Gill's three children have a different experience when they accompany their father to work on Saturdays: they enjoy their burgers while sitting beside the dugout in Fenway Park, as Gill watches his patients on the field. These patients are among his newest; in the spring of 2005, the Boston Red Sox recruited him as medical director. And to Gill, an avid sports fan, the appointment felt like hitting one out of the park.

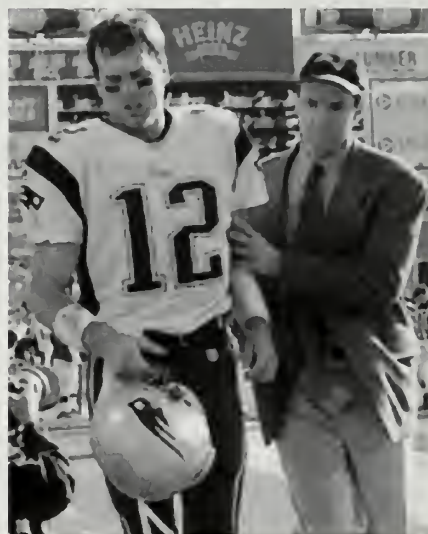
For many years Gill stoked his enthusiasm for sports by working as an assistant team physician for the New England Patriots and the Boston Bruins. Those roles taught him a new way to take in a game. Now when Gill watches the Sox, or any of his teams, he's no longer just a fan. He's not just concerned with whether Manny Ramirez caught the pop fly or Curt Schilling struck out a batter. "My eyes hardly ever follow the ball," he says. "Instead I pay attention to the player's leg position on a slide. I watch the pitcher's arm for any lagging motion or signs he's hurting or getting tired."

From the sidelines at Gillette Stadium, he tracks the Patriots' faces rather than the pigskin. "Every play in football involves a contact," he says. "The ball goes into play and then 350-pound guys slam into each other. I gauge how quickly the quarterback gets up. Does he seem dazed? You get to know the players and study their faces for signs they're hurt, even when they insist they're okay."

Like any team physician, Gill applies splints and casts, tends to rotator cuffs, pumps fluids into players with colds,

and performs surgery when necessary. But he's also trying to do his job in a way that's surprisingly revolutionary in sports medicine. "The Red Sox take a different approach than other teams do," he said. "We don't just practice reactive medicine; we strive to prevent injury and sickness whenever possible. During our preseason physical exams, we screen players and coaches for cholesterol, heart disease, asthma, diabetes. If we can help them take care of such problems then, it means less missed time on the field—and healthier patients."

With frequent trades to new teams in



THE BEST DEFENSE: Gill helps Patriots quarterback Tom Brady off the field after a tough sack.

new cities, most players have never received longitudinal health care or had the same doctor for more than a few years. To remedy this lapse, Gill and his staff take long histories of each player and often of their family members. "Most players don't have primary-care doctors, and neither does the coaching staff," he says. "Some coaches are 50 years old and their lives as ballplayers are catching up with them."

He points out that the baseball lifestyle is especially tough. "After six weeks of spring training, the team plays about 160 regular games, and then, with luck, come the playoffs. Players fly nearly every week during the season, sometimes multiple times," he says. "Late games mean little sleep. Nutrition suffers as they grab fast food or candy bars, which are always around the dugout or clubhouse."

Working in the professional sports industry can be tough on any doctor who forgets he or she is a physician first, Gill adds. "The politics for team doctors are often unreal," he says. Some teams pressure physicians into unethical practices, such as not disclosing injuries or numbing injuries so players can return to games before they're healed.

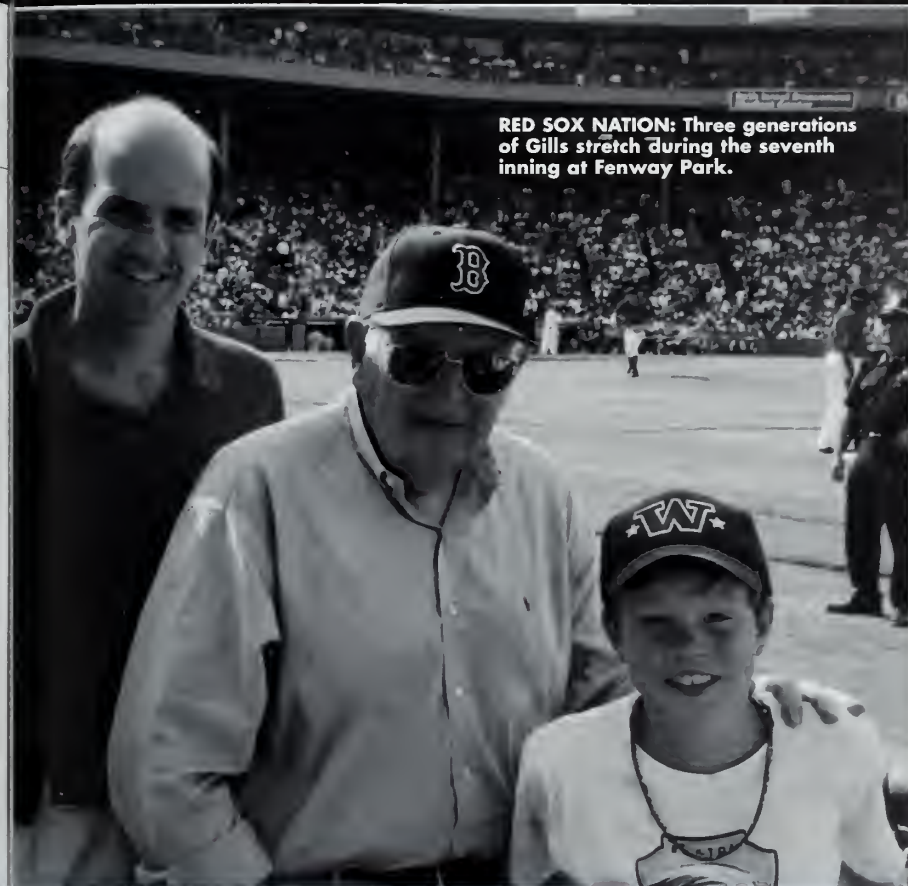
"But there is only one type of team physician to be—a true physician," Gill says. "The second you treat players differently from regular patients, you start to deliver poor care and you lose their trust. You hope medicine can be above pro sports and business. I don't let either influence my medical decisions. We're fortunate in Boston to have teams with highly ethical owners who want the best for their players. They give us just one dictum—do whatever it takes to provide their organizations with the best medical care in the league."

Extra Innings

The truly revolutionary aspect of Gill's work is his research in biomechanics and tissue engineering at Massachusetts General Hospital, work that played a major role in why the Red Sox chose him as team physician. In the MGH Bioengineering Laboratory, for example, Gill does three-dimensional imaging of how joints perform. After a knee reconstruction, he can determine whether the joint is beginning to function normally. These studies have changed the way certain knee ligament reconstructions are now done.

"When Curt Schilling's ankle was reinjured in the spring of 2005," Gill says, "my staff and I could quantify his strength, determine how normal his gait was, and judge his recovery more accurately than anyone had done before. We

RED SOX NATION: Three generations of Gills stretch during the seventh inning at Fenway Park.



“My eyes hardly ever follow the ball. Instead I pay attention to the player’s leg position on a slide. I watch the pitcher’s arm for any lagging.”

collaborated with the MGH Biomotion Laboratory to get data on this type of injury. That simply hadn’t ever been done for an in-season athlete.” Gill compiled a kinematic profile for Schilling’s entire body—a study of his motions, excluding the forces of mass and gravity—and combined that information with calculations of the forces exerted on Schilling’s skeleton by his gait. With those data Gill and the staff from the biomotion laboratory assembled a three-dimensional picture of each body segment during balance tests and pitching simulations. Analysis of those reconstructions helped him prescribe the most appropriate rehabilitation exercises and orthoses to get Schilling back on the mound.

Gill tries to avoid full-knee replacements, preferring instead to put another research project to use: regrowing cartilage using a microfracture technique. “Because articular cartilage has no blood vessels or nerve tissue, the body can’t heal defects to cartilage on its own,” Gill says. He can bore

into the subchondral bone in the knee, however, and find undifferentiated cells, which, when subjected to limited weight-bearing stress and continuous passive motion, can differentiate to form cartilaginous tissue, “healing” the defects by thickening the tissue.

“I believe the future of arthritis therapy lies in biologic treatments for cartilage regeneration,” Gill says, “rather than total joint arthroplasty. At Mass General’s Laboratory for Musculoskeletal Tissue Engineering, we create gels from cell-seeded collagen to resurface joints damaged by trauma or osteoarthritis.”

Home Team Advantage

In addition to his team doctoring and research, Gill maintains a full practice at Massachusetts General Hospital, where he performed 600 surgeries last year and sees 125 patients a week. He also directs the MGH Sports Medicine Fellowship program and the orthopedic clerkships.

Gill knows he couldn’t maintain his practice, attend to his research, and doctor three teams without talented physicians by his side. He’s grateful for his staff, especially his father, Thomas J. Gill III ’57, who helps run his research team when he has to attend an out-of-town Patriots game.

Having his father work for him reverses past roles: Gill cleaned rat cages in his father’s immunology laboratory at the University of Pittsburgh for \$4.50 an hour as a teenager. “My dad is the smartest guy I’ve ever met,” he says. “It isn’t easy, but I’ve always tried to live up to the standard he and my mother set for me.” So much so that Gill followed his father into medicine, although they chose different specialties.

He didn’t follow his father onto the gridiron, however. “My father played football in college,” he says. “And because of the injuries he sustained, he discouraged me from playing the game.” So baseball became a passion.

And in the younger Gill’s household, as in the homes of many orthopedic surgeons, bunk beds are banned, and skiing and football are discouraged. But baseball and hockey are revered.

Gill says his son, Ty, has learned a great deal from attending so many professional games at his father’s side. “We like to discuss what kind of pitch should be thrown, or when a pitcher should come out of the game. I can see the effect when I go to his Little League games, because he plays in a very smart way. It’s the same with hockey, where he now makes no look drop passes or can fake out a defender, because that’s what he has seen the Bruins do.”

Although it may seem incongruent to let his son play hockey—a sport known for its roughness—but not football, Gill says his specialty has shown him the differences. “Having taken care of football and hockey players for a long time now,” he says, “I see that football has a higher incidence of what I would classify as severe or catastrophic injuries. Ultimately, they can play what they want—but not without a little fatherly input first.” Such as work hard and do what you love. ■

Janice O’Leary is assistant editor of the Harvard Medical Alumni Bulletin.

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